DOCUMENT RESUME

ED 129 721 SP 010 433

AUTHOR	Dwight, Mary Phyl, Ed.; And Others
TITLE	Team Handball; Racquetball; Orienteering; September 1976--September 1978. NAGWS Guide.
INSTITUTION	American Alliance for Health, Physical Education, and Recreation, Washington, D.C. National Association for Girls and Women in Sport.
PUB DATE	76
NOTE	191p.
AVAILABLE FROM	American Alliance for Health, Physical Education, and Recreation, 1201 16th Street, N.W., Washington, D.C. 20036 (No price quoted)
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	Athletes; Athletic Coaches; Athletic Equipment; *Athletic Programs; Athletics; Bibliographies; *Guides; *Physical Education; *Womens Athletics
IDENTIFIERS	Orienteering; *Raquetball; *Team Handball

ABSTRACT

This guide for team handball, racquetball, and orienteering is one in a series of guides for 22 sports published by the National Association for Girls and Women in Sport (NAGWS). These guides contain information on NAGWS-approved playing rules, officials ratings, articles on teaching, coaching and organization, regulations governing national championships, bibliographies, and special features related to specific sports. A section in each guide presents information about NAGWS and the services it offers to teachers, coaches, administrators, and players. Team handball features presented in this guide include: refereeing and related problems; introducing team handball to beginners; goalkeeper training; backcourt shooting, and implementation of team handball in sports programs. Raquetball features include: an outline of a basic raquetball course for high school or college; game variations; selecting equipment; and a glossary. Orienteering covers: score orienteering; course settings; and simple mapping techniques for the teacher. (MM)

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SP

National Association for Girls & Women in Sport

gws

Team Handball
Racquetball
Orienteering

SEPTEMBER 1976 – SEPTEMBER 1978

U.S. DEPARTMENT OF HEALTH,
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- Officials' ratings in most sports
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NAGWS guide

Team Handball
Racquetball
Orienteering

SEPTEMBER 1976 – SEPTEMBER 1978

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NATIONAL ASSOCIATION FOR GIRLS
& WOMEN IN SPORT
American Alliance for Health,
Physical Education, and Recreation

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Published by the
AMERICAN ALLIANCE FOR HEALTH,
PHYSICAL EDUCATION, AND RECREATION

1201 Sixteenth St., N.W. Washington, D.C. 20036

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PREFACE

The National Association for Girls and Women in Sport (NAGWS) has once again identified activities that are gaining in popularity in the United States. Many persons have expressed a desire to have access to "official" rules and to facilitate their instruction of team handball, racquetball and orienteering. This *Guide* has been developed to meet those needs.

Several unique features of this *Guide* reflect the thrust of NAGWS to provide guidance and leadership for all sport programs.

(1) This is a "people" guide. Rules and techniques are applicable to both sexes.

(2) Official international rules have been published for all three sports. (Orienteering rules are abridged.) Thus a participant can perform anywhere and at any level with the knowledge that the rules are always applicable.

NAGWS invites your comments about this newest addition. Please contact the appropriate editor or NAGWS Executive Secretary, 1201 Sixteenth Street, N.W., Washington, DC 20036.

Our sincerest appreciation to Helen Knierim, Mary Phyl Dwight, Jo Oliver and Maxine Hunter for seeing a need, accepting a challenge and ensuring that this *Guide* was published.

NATIONAL ASSOCIATION FOR GIRLS AND WOMEN IN SPORT

The National Association for Girls and Women in Sport is a nonprofit, educational organization designed to serve the needs of participants, teachers, coaches, leaders and administrators in sports programs for girls and women. It is one of seven associations of the American Alliance for Health, Physical Education, and Recreation.

PURPOSE

The purpose of the National Association for Girls and Women in Sport is to foster the development of sports programs for the enrichment of the life of the participant.

BELIEFS

The National Association for Girls and Women in Sport believes that:

Sports are an integral part of the culture in which we live.

Sports programs are a part of the total educational experience of the participant when conducted in educational institutions.

Opportunities for instruction and participation in sports appropriate to her skill level should be included in the experience of every girl.

Sports skills and sports participation are valuable social and recreational tools which may be used to enrich the lives of women in our society.

Competition and cooperation may be demonstrated in all sports programs, although the type and intensity of the competition and cooperation will vary with the degree or level of skill of the participants.

An understanding of the relationship between competition and cooperation and the utilization of both within the accepted framework of our society is one of the desirable outcomes of sports participation.

Physical activity is important in the maintenance of the general health of the participant.

Participation in sports contributes to the development of self-confidence and to the establishment of desirable interpersonal relationships.

FUNCTIONS

The National Association for Girls and Women in Sport promotes desirable sports programs through:

1. Formulating and publicizing guiding principles and standards for the administrator, leader, official, and player.
2. Publishing and interpreting rules governing sports for girls and women.
3. Providing the means for training, evaluating, and rating officials.
4. Disseminating information on the conduct of girls and women's sports.
5. Stimulating, evaluating, and disseminating research in the field of girls and women's sports.
6. Cooperating with allied groups interested in girls and women's sports in order to formulate policies and rules that affect the conduct of women's sports.
7. Providing opportunities for the development of leadership among girls and women for the conduct of their sports programs.

STANDARDS IN SPORTS FOR GIRLS AND WOMEN

Standards in sports activities for girls and women should be based upon the following:

1. Sports activities for girls and women should be taught, coached, and officiated by qualified women whenever and wherever possible.
2. Programs should provide every girl with a wide variety of activities.
3. The results of competition should be judged in terms of *benefits to the participants* rather than by the winning of championships or the athletic or commercial advantage to schools or organizations.

Health and Safety Standards for Players

Careful supervision of the health of all players must be provided by –

1. An examination by a qualified physician
2. Written permission by a qualified physician after serious illness or injury
3. Removal of players when they are injured or overfatigued or show signs of emotional instability
4. A healthful, safe, and sanitary environment for sports activity
5. Limitation of competition to a geographical area which will permit players to return at reasonable hours; provision of safe transportation.

General Policies

1. Select the members of all teams so that they play against those of approximately the same ability and maturity.
2. Arrange the schedule of games and practices so as not to place demands on the team or player which would jeopardize the educational objectives of the comprehensive sports program.
3. Discourage any girl from practicing with, or playing with, a team for more than one group while competing in that sport during the same sport season.
4. Promote social events in connection with all forms of competition.

SOURCES OF INFORMATION AND SERVICE

All requests for information about services should be addressed to: Executive Secretary, National Association for Girls and Women in Sport (NAGWS), AAHPER, 1201 - 16th Street, N.W., Washington, D.C. 20036.

NAGWS SPORTS GUIDES COMMITTEES
INTEREST INDICATOR

The Sport Guide Committee is endeavoring to broaden its base of personnel and to strengthen services to *Guide* readers. The purpose of this form is to offer readers an opportunity to join us in meeting this need. Please complete this form and send it to the [illegible]ate Guide Coordinator-elect, Pa[illegible] Sherman, Univ. of Wiscon[illegible]ver Falls, WI 54022.

Name ____

Professional Address ______________________________

City ______________ State ________ ZIP Code __________

1. Check the Sport Committee(s) which would be of interest to you:

_____ Aquatics
_____ Archery
_____ Badminton
_____ Basketball
_____ Bowling
_____ Fencing
_____ Field Hockey

_____ Flag Football
_____ Golf
_____ Gymnastics
_____ Lacrosse
_____ Orienteering
_____ Racquetball
_____ Soccer
_____ Softball

_____ Speedball
_____ Squash
_____ Synchronized Swimming
_____ Team Handball
_____ Tennis
_____ Track and Field
_____ Volleyball
_____ Water Polo

2. Would you like to serve as member of a Sports Guide Committee of your interest?* _____ Y[illegible] _____ No
3. Would you consider submitting an article to a Guide Committee as a prospective author? _____ Yes _____ No
   Possible topic or title ______________________________
4. Can you suggest topics for articles which you would like to have included in future *Guides*? (Please indicate sport.) ______________
   ____
5. Are there others whom you would recommend for consideration as possible committee members or authors? Please indicate below. (Use additional paper, if necessary.)

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Professional Address ______________________________

City ______________ State ________ Zip Code __________

Sports Committee Member ☐ Prospective Author ☐ (Check one)

---

*You may serve on only one Sport Guide Committee at a time.

NATIONAL COACHES COUNCIL

The National Coaches Council was formed by the NAGWS to:

(1) provide a channel of direct communication among coaches at all educational levels
(2) assist in the formulation and dissemination of guiding principles, standards and policies for conducting competitive sports programs for girls and women
(3) keep members informed of current coaching techniques and trends
(4) sponsor clinics and conferences in sports and coaching skills
(5) provide input from coaches to USCSC sports committees and representative assembly
(6) promote cooperative efforts with other sports-centered organizations
(7) provide a united body for positive political action in the realm of girls' and women's athletics.

Academies for 11 sports have been established. (Note the application blank for specific listings.) Membership in each Academy is open to any coach of girls or women's sports or any interested person. Annual dues for AAHPER members are $10.00 per Academy. Non-AAHPER members pay $20.00 annually for membership in one sport Academy and $10.00 for each additional Academy membership desired. The $10.00 non-membership fee may be applied at any time toward AAHPER membership.

Get involved . . . JOIN NOW.

Sports Academies of the NATIONAL COACHES COUNCIL

National Association for Girls and Women in Sport: AAHPER
1201 16th St., NW, Washington, DC 20036

NAME ______________________________
last first initial

ADDRESS ______________________________
street

____
city state zip

FOR OFFICE USE:
DT:____ AMT:____
CK:____________

AAHPER MEMBERS: Membership number as it appears on your journal label: ____________

Teaching/Coaching level (please check): College___ Jr. College___ High School___ Jr. High ___ Elementary___ Other____________

Please check the Academies you wish to join:* ☐ Badminton ☐ Basketball ☐ Field Hockey ☐ Golf ☐ Gymnastics ☐ Softball ☐ Swimming/Diving ☐ Synchronized Swimming ☐ Tennis ☐ Track & Field ☐ Volleyball

I am willing to serve on an Academy committee: ☐

*AAHPER members: $10.00 per Academy. Non-AAHPER members: $20.00 for one Academy; $10.00 each additional Academy. $10.00 non-membership fee may be applied at any time toward AAHPER membership.

Please send AAHPER membership information: ____yes ____no

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1976-1978

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*The 1976-78 *Guide* was prepared by the 1975-76 Guide Committee. The 1978-80 *Guide* will be prepared by the 1976-78 Guide Committee.

INDOOR HANDBALL LAWS OF THE GAME*

The Game

Handball is a team sport. Two teams play against each other. A *team* consists of 12 players (10 court players and 2 goalkeepers), of whom not more than 7 (6 court players and 1 goalkeeper) play at a time. The remaining 5 players are substitutes. A player may join the game or be substituted from the place of the substitutes at any time. No player except the goalkeeper is allowed to enter the goal-area.

Each team tries to throw the ball into the goal of the opposing team and to defend its own goal against the attacks of the opponent. The ball is played with the hands, but it may also be touched or played with any part of the body above and including the knees. The goalkeeper alone is allowed, in the act of defense, to touch the ball with all parts of his body inside his own goal-areas.

Players may bounce the ball repeatedly with one hand when running, walking, or standing. Having recaught the ball after having bounced it, the player may again move with in in his hand(s), but not more than three steps.

The *ball* may be held for a maximum time of three seconds. The game shall be started from the centre of the court at the moment the referee blows his whistle for the *throw-on* to be taken. After a goal has been scored, the game shall be resrarted with a throw-on from the center of the court by a player from the team conceding the goal.

After half-time, *goals and the throw-on* shall be changed.

The team, having scored the greater number of goals, is the winner.

If both teams have scored the same number of goals or if no goal has been scored at all, the game is a draw.

Every game shall be conducted by *two referees*, assisted by a *scorer* and a *timekeeper*.

The referees enforce the rules of the game.

The referees are in charge of the game from the moment they enter the playing area until they have left it.

Rule 1 The Playing Area

1:1 The playing area (plan 1), divided into 2 goal-areas and the playing court, shall be rectangular, not more than 44 m and not less than 38 m in length, not more than 22 and not less than 18 m in width. The longer boundary lines are called the touch-lines, the shorter the goal-lines.

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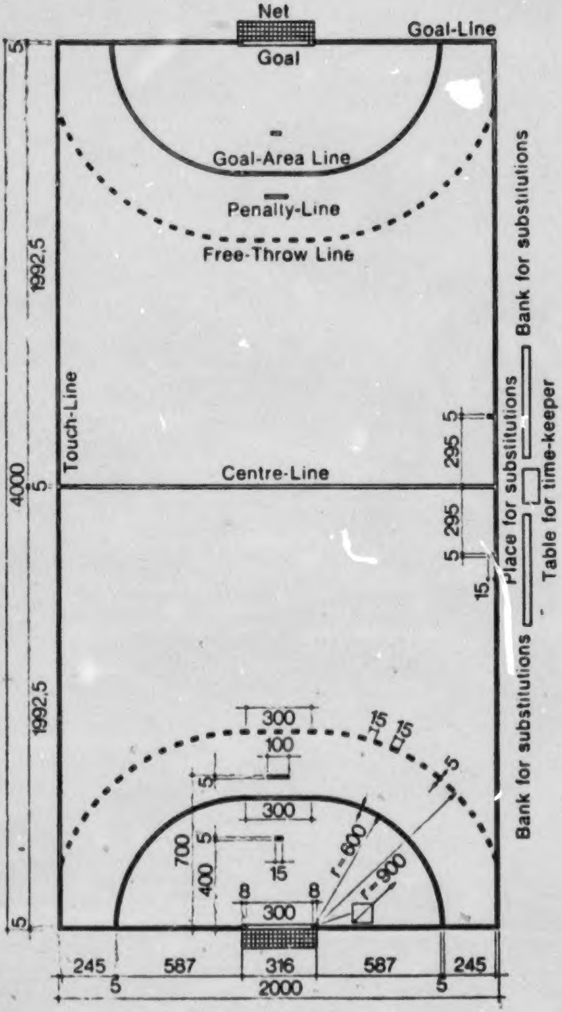
*These are official international rules and have been reprinted with permission of the United States Team Handball Federation.


Net
Goal-Line
Goal
Goal-Area Line
Penalty-Line
Free-Throw Line
Touch-Line
Centre-Line
Bank for substitutions
Place for substitutions
Table for time-keeper
Bank for substitutions
4000
1992,5
1992,5
5
5
5
5
295
295
5
15
300
100
5
300
700
5
400
15
8
8
300
r=600
r=900
15
15
5
245
587
316
587
245
5
5
2000

Rule 1. The Playing Area

The playing area shall be 40 m in length and 20 m in width for official IHF matches.

Notice

■ *A safe zone alongside the playing area should, if possible, be kept free (plan 1). The condition of the playing ground must never by any means be changed in favour of one of the teams.*

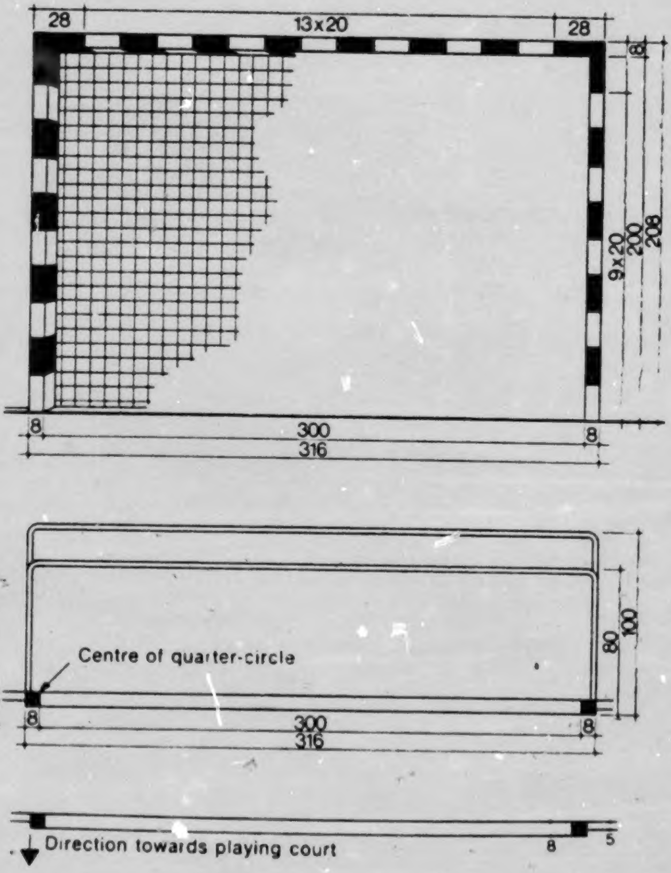
1:2 The goals (plan 2) shall be placed on the centre of each goaline. A goal consists of 2 upright posts, equidistant from the corners of the playing area, 3 m apart and 2 m high, firmly fixed to the ground and firmly joined by a horizontal cross-bar. The outer edge of the goal-line and the back of the goal-post shall be in line. The posts and the cross-bar shall be square, 8 cm X 8 cm, made of wood or a synthetic material, and painted on all sides in 2 colours, which must contrast effectively with the background. Where the goal-posts and the cross-bar join, they shall be painted in the same colour, and the rectangle of colour of each shall be 28 cm long. The other rectangles of colour shall each be 20 cm long.
The goal shall be provided with a net, attached in such a way that a ball thrown into it, cannot rebound immediately.

1:3 Each goal-area is made by marking a line 3 m long at a distance of 6 m from the goal and parallel to the goal-line, and the ends of this line are connected with the goal-line by means of quarter-circles with a radius of 6 m measured from the back inside corner of the goal-posts. This line is called the goal-area-line.
At a distance of 4 m from the backside of the middle of the goal-line and parallel to it is marked a line, 15 cm long (see plan 1).

1:4 A broken line shall be marked 3 m long at a distance of 9 m from the goal and parallel to the goal-line, and the ends of this line shall be connected with the goal-line by means of quarter-circles with a radius of 9 m measured from the back insider corner of the goal-posts. This line is called the free-throw-line.
The lines and the dots shall each measure 15 cm (plan 1).

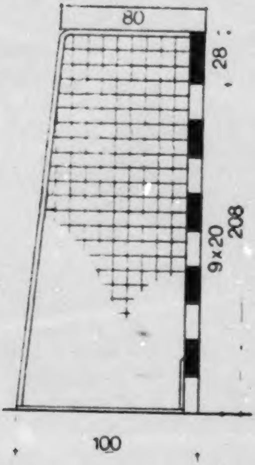
1:5 At a distance of 7 m from the middle of the goal-line and parallel to it is marked a line, 1 m long, the penalty-mark (plan 1).

Plan 2

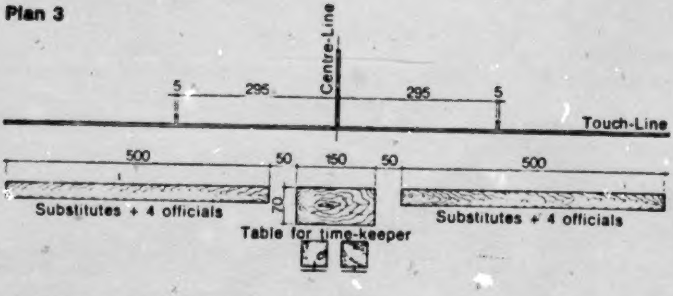

13x20
9x20
Centre of quarter-circle
Direction towards playing court

Rule 1. The Playing Area

Plan 2


80
28
9x20
208
100

Plan 3


Centre-Line
5
295
295
5
Touch-Line
500
50
150
50
500
70
Substitutes + 4 officials
Table for time-keeper
Substitutes + 4 officials

1:6 The middles of the 2 touch-lines are connected with the halfway-line (plans 1 and 3).

1:7 At a distance of 3 m from the halfway-line 2 parallel lines are marked, each 15 cm long; these lines form the boundaries of the places of the substitutes (plan 1).

1:8 All lines form part of the area they enclose. They all shall be clearly visible; they must be 5 cm wide (except 1:9).

1:9 Between the goal-posts the goal-line must have the same width as that of the goal-posts (8 cm) (plan 2).

Notice

■ *If during the game the ball has been changed, it must be taken into use again at the first interruption of the game, provided it is in accordance with the rules.*

Rule 2 The Ball

2:1 The ball shall be spherical and consist of a rubber bladder and an outer casing of one-coloured leather. It must not be inflated too hard.

Notice

■ *Balls that have been paint-sprayed or painted, or are partly or wholly covered with any other material, not originally belonging to it, must not be used.*

2:2 At the start of the play the ball for men and youths shall weigh not more than 475 g and not less than 425 g. Its circumference shall not be more than 60 cm and not less than 58 cm.

The ball for women, female and male juniors shall weigh not more than 400 g and not less than 325 g, and its circumference shall not be more than 56 cm, and not less than 54 cm.

2:3 2 valid balls must be available for every match.

They are to be checked by the referees, who also choose the one to be used. In case of disagreement, the opinion of the referee who is officially named first, shall prevail.

2:4 The ball must not be changed during the game but for imperative reasons.

Notice

■ *If during the game the ball has been changed, it must be taken into use again at the first interruption of the game, provided it is in accordance with the rules.*

Rule 3 The Players

3:1 Each team consists of 12 players (10 courtplayers and 2 goal-keepers), of whom a maximum of 7 players (6 courtplayers and 1 goalkeeper) may be present on the playing area at the same time (free-throw, cf. rule 3:6 or penalty-throw, cf. rule 3:7).
The goalkeepers must never act as courtplayers. A courtplayer, however, may act as goalkeeper (8:13).

Notice

■ *A courtplayer, acting as goalkeeper, may at any time act as a courtplayer again.*

3:2 At the beginning of a match at least 5 players of either team shall be present on the playing area. The number may at any time of the match, including extra time, be increased up to 7. Play continues also if the number of players of one or both teams drops below 5.

3:3 A player may at any time join the game from the "place of the substitutes" (1:7) (free-throw, or penalty-throw 14:1 b).
A player "entering the court" shall notify the Scorer and the Timekeeper (free-throw). The free-throw shall be taken from the point where the player crossed the touch-line.
If a player who is not entitled to take part in the game joins the game a free-throw or a penalty throw (14:1 b) shall be awarded to the opposite team; the faulty player shall be disqualified for the rest of the game (17:20).

Notice

■ *A player, completing his team as the 6th or 7th player, or coming in after his time of suspension has expired, or being a substitute player who is entitled to play again after his time of suspension has expired shall be considered "player entering the court".*

3:4 *A player who leaves the court in an ungentlemanly way shall* be disqualified for the rest of the game (17:20).

3:5 If a player during the game crosses one of the boundary-lines, but immediately afterwards re-enters the court, he shall not be regarded as "leaving the court".

Notice

■ *The intentional crossing of a boundary-line in order to gain an advantage shall be penalized by the award of a free-throw to the opposing team.*

3:6 Substitutes may join the game at any time during the game, i.e., if time is not interrupted by the referees, and as often as is wanted without notifying the timekeeper. The players to be substituted must have left the court before the substitutes enter (free-throw or penalty-throw 3:7).

Notice

Players can only be substituted from their own "place of the substitutes" (cf. 3:3) (free-throw or penalty-throw).

■ *Also the goal-keeper can only be substituted from the "place of the substitutes".*

3:7 Faulty substitution of players shall be penalized by a free-throw to the opposing team to be taken from the place where the substitute crossed the touch-line.
The penalty for a second faulty substitution shall be a free-throw and the suspension of 2 minutes of the offending player, and free-throw and the suspension of 5 minutes for all further faulty substitutions.
For faulty substitution on the part of the team that is in possession of the ball the referee must at once interrupt the play by blowing his whistle. For faulty substitution on the part of the team that is not in possession of the ball the referees shall not interrupt the play unless it is directly influenced by the faulty substitution. If by faulty substitution a clear chance of scoring a goal is taken away from the opposing team, the offending substitute shall be disqualified for the rest of the game (17:20), and a penalty-throw shall be awarded.

3:8 All the courtplayers shall be dressed alike. The goalkeeper shall wear colours which distinguish him from the players of his own as well as of the opposing team (17:23).
The players shall be numbered from 1–12 on the fronts and backs of their shirts, and on their shorts, the goal-keepers being numbers 1 and 12. In tournaments where a team may consist of 16players the third goalkeeper shall be number 16.

The figures shall be at least 10 cm high on the front and at least 20 cm high on the back, and 7 cm on the shorts, and their colour shall contrast with the colour of the shirt.

Players shall wear shoes or boots. When playing on hard ground only light shoes or boots are allowed. When playing on soft ground bars or studs of leather, rubber or a corresponding synthetic material are allowed. Bars must be flat and at least 12 mm in width. Studs must be cylindrical and not less than 12 m in diameter. Spikes and pointed studs are prohibited. The wearing of wristlets, wristwatches, rings, necklaces, frameless and rimless glasses, as well as of anything else which may be dangerous to another player, is prohibited.

Before the game is started, the referees shall examine the equipment of the players, and if they find things liable to cause injury to another player, these things must be removed before the player is allowed to take part in the game.

Rule 4 The Duration of the Games

4:1 The playing-time is as follows:

For men 2 equal periods of 30 minutes with an interval of 10 minutes. (In tournaments, as a rule, 2 equal periods of 15 minutes without any interval.)

For women and for male juniors 2 equal periods of 25 minutes with an interval of 10 minutes. (In tournaments, as a rule 2 equal periods of 10 minutes without any interval.)

For all other teams 2 equal periods of 20 minutes with an interval of 10 minutes. (In tournaments, as a rule, 2 equal periods of 10 minutes without any interval.)

The interval may be shortened if wanted by the teams and agreed by the referee.

4:2 After the toss (17:5) the referee starts the game by blowing his whistle; the game ends when the timekeeper gives the final signal. The throw-on shall be taken from the center of the court in any direction (free-throw). (see also 16:1, 2, 5, 6, 7, 8).

4:3 Every player shall be in his own half of the court, and all players of the team opposing that of the thrower shall remain not less than 3 m from the thrower until the ball has left his hand (free-throw).

4:4 A goal cannot be scored (i.e. against the opponents) direct from a throw-on (goal-throw 12).

Notice

■ *Direct means: The ball gets into the goal without having touched any player.*

4:5 After the interval ends shall be changed, and the throw-on shall be taken by a player of the opposite team to that of the player who started the game.

4:6 The referees alone shall decide, when time has to be stopped and be continued again. They make the timekeeper stop the time-indicators and set them going again.
The timekeeper shall notify the coaches of the teams about the time to be played when play is restarted.

Notice

■ *If there is a time-indicator for the information of the spectators, the stopping and running on of the referees' watches should be made visible on the time-indicator by the timekeeper.*

4:7 Time shall be extended to permit of a free-throw or a penalty-throw being taken at or after the expiration of the normal period of either half. As soon as the result of the throw is ascertained, the timekeeper shall signal the end of the game.
The timekeeper signals end-of-play:

a) when the ball is thrown into the goal without any infringement of the rules having been committed. The ball may first touch the goalkeeper, the cross-bar, the goal-posts, or a player of the defending team;
b) when the ball passed over the goal-line outside the goal;
c) when the ball remains in the goal-area or is in possession of the goalkeeper;
d) when the ball bounces back on the court from the goalkeeper, a goal-post, or the cross-bar.

Infringments of the rules being committed before or during the taking of the free-throw or the penalty-throw shall be penalized.

4:8 If the referees are aware that the timekeeper has signalled half-time or end-of-play too early, he shall at once start the play again if none of the players have left the playing ground.

If one of the teams was in possession of the ball when the wrong signal was given, the game shall be restarted with a free-throw to be taken by the team in question and from the place where the ball was when the play was interrupted; the referee shall blow his whistle before the throw is taken.

If the ball was in one of the goal-areas when the wrong signal was given, the game shall be restarted with a throw-out from the goal-area in question.

In all other cases of interruption, the game shall be restarted with the throw that would have been taken or awarded, if the game had not been interrupted.

If the ball was in play on the court (not in possession of either team) when the wrong signal was given, the game shall be restarted with a referee's throw from the centre of the court.

If half-time is signalled too early and the players have left the playing area before the referees are aware of the mistake, the ordinary interval shall be taken. Then the first half shall be continued, and the play is started from the centre of the court after the referee has blown his whistle and taken a referee's throw. The teams defend the same goals as before. When the ordinary time of the first half has expired, i.e., when the play has been going on for the minutes by which it was wrongly shortened before the interval, the ends shall be changed, and the second half shall be started in accordance with the rules but without any further interval.

Notice

- *If the timekeeper has signalled half-time too late, the second half must be shortened accordingly.*

4:9 If previously decided that a match shall have a winner, and if at the end of the second half it is a draw, two extra halves must be played after an interval of 5 minutes. The referee shall again toss a coin, and the team winning the toss shall have the option of ends or the throw-on.
The 2 halves shall be of 5 minutes each. (Ends shall be changed without an interval).
If after these 2 halves there is still no decision, another 2 halves of 5 minutes each must be played after an interval of 5 minutes and after a new toss has been made. (Ends shall be changed without an interval).
If this extension also ends as a draw, the further procedure shall be in accordance with the regulations of the competition in question.

4:10 During extra periods no other players may be used than those originally forming the team (see, however, 3:2).

Rule 5 Playing the Ball

5:1 *It shall be permitted:*
to stop, to catch, to throw, to bounce, or to strike the ball in any manner and in any direction by using hands (fists or open hands), arms, head, body, thighs, or knees;

5:2 to hold the ball for a maximum time of 3 seconds, also when it is lying on the ground;

5:3 to take a maximum of three steps while holding the ball.
One step has been taken:

a) when one foot is lifted from the ground and put down again;
b) when one foot is moved on the ground from one place to another;
c) when one foot touches the ground while the player is catching the ball and the other foot then touches the ground;
d) when a player after a jump touches the ground with one foot only and then makes a hop on this same foot or after this hop touches the ground with both feet;
e) when a player after a jump touches the ground with both feet and after the jump one foot is lifted and put down again;
f) when a player after a jump touches the ground with both feet and then moves one foot on the ground from one place to another.

Notice

- *It is permitted to move the other foot in the air or on the ground until level with the first.*

5:4 to bounce the ball once and to catch it again with one or both hands, either while running or standing.
to bounce the ball repeatedly with one hand either while running or standing, or to roll the ball on the ground repeatedly with one hand either while running or standing and then to recatch it with one or both hands. When a player catches the ball again with one or both hands, he is permitted to take a maximum of 3 steps and to hold it for a maximum time of 3 seconds, then he must pass it (free-throw).

Bouncing of the ball can only take place if the player has control of it when he directs it with any part of the body to the ground. Bouncing of the ball can again take place after the ball has touched another player or a goal-post or the cross-bar. A player may take as many steps as he wants between the bouncing and the recatching of the ball;

5:5 to place the ball from one hand into the other;

5:6 to stop the ball with one or both hands and immediately afterwards catch it if the player does not move when doing it;

Notice

- *"move" = the player changes his place.*

5:7 to pass the ball when kneeling, sitting, or lying on the ground;
It shall be prohibited;

5:8 to touch the ball more than once, unless in the meantime it has touched the ground, another player, or a goal-post or the cross-bar (free-throw; see, however, 5:6). No penalties for fumbling.

Notice

- *Fumbling = a player tries to catch the ball but fails to get control of it.*

5:9 to touch the ball with any part of the leg below the knee or with the foot (free-throw). It shall not be punished, however, if it does not give the offender or his team an advantage, and it shall be no infringement of the rules if the ball is thrown on the player's leg or foot by an opponent;

5:10 to dive for the ball lying or rolling on the ground (free-throw), except for the goalkeeper in his own goal-area;

5:11 intentionally to play the ball across the touch-line or the goal-line outside the goal (free-throw), except for the goalkeeper in his own goal-area, when he fails to get control of the ball and plays it across his own goal-line outside the goal (goal-throw, 12:1 a).

Notice

- *The free-throw shall be taken from the place where the ball has crossed the line (see 13:2).*

5:12 The game shall not be interrupted if the ball happens to touch the referee(s).

Rule 6 Approach to Opponent

It shall be permitted:

6:1 to make use of hands and arms to get hold of the ball;

6:2 in any direction with one flat hand to play the ball from an opponent (except 7:4);

6:3 to obstruct an opponent with one's body, also when he is not in possession of the ball.

It shall be prohibited:

6:4 with the fist to play the ball from the opponent (free-throw; see, however, 6:10);

6:5 with one or both hands to snatch or violently to strike the ball from the hands of an opponent (free-throw; see, however, 6:10);

6:6 intentionally to throw the ball on an opponent or to move the ball towards him as a dangerous feint (free-throw; see however, 6:10);

6:7 to obstruct an opponent with arms, hands or legs (free-throw; see, however, 6:10);

6:8 to catch hold of an opponent with one or both hands, in any way to handle him roughly by hitting, pushing, running into, jumping into, or tripping him up or by throwing oneself before him, or by endangering him in any other way (free-throw; see, however, 6:10);

6:9 to push or to force an opponent into the goal-area (free-throw; see, however, 6:10);

6:10 in case of serious infringements of the rules 6:4–9, committed in the offender's own half of the court, and in cases of infringements of the rules 6:4, 5, 7, 8, 9) committed in any part of the court by which a clear chance of scoring a goal is destroyed, a penalty-throw shall be awarded (14:1 a, b).

6:11 If a player falls with the ball under him in such a way that the play is unduly delayed, the referees shall interrupt the game and restart it with a referee's-throw unless one of the teams shall be punished (15:1 c).

Rule 7 The Goal-Area

7:1 Only the goalkeeper is allowed to enter or to be in the goal-area. The latter is considered entered if in any way it is touched by a court-player. The goal-area includes the goal-area-line.

7:2 The penalties for entering the goal-area as follows:
a) free-throw, when the court player is in possession of the ball;
b) free-throw, when the court player is not in possession of the ball but gains a glear advantage by entering the goal-area (see, however, 7:2 c);
c) penalty-throw, if a court player of the defending team intentionally and clearly for the purpose of defence enters his goal-area.

7:3 A court player entering the goal-area after playing the ball shall not be punished, provided the entering does not give a disadvantage to the opponents.

7:4 The ball being in the goal-area belongs to the goalkeeper. No court player shall be allowed to touch the ball lying or rolling in the goal-area or held by the goalkeeper being in the goal-area (free-throw).

Notice

■ *The ball shall be considered to be in the goal-area and to belong to the goalkeeper when it touches the goak-area-line. The ball is not considered to be in the goal-area when it is in the air over the goal-area.*

7:5 If the ball gets into the goal-area (except 7:7b, c) and is still in play, the goalkeeper shall throw it out on the court again by a throw-out.
The opponents shall be allowed to place themselves immediately at the goal-area-line when the throw-out is taken. A goal may be scored direct from a throw-out (Notice 4:4).

7:6 Play shall continue if the ball gets out on the court again from the goal-area (see also 7:7d).

7:7 If a player intentionally plays the ball into his own goal-area, the following awards shall be given:
a) Goal, if the ball gets into the goal;

b) Penalty-throw, if the goalkeeper touches the ball, and no goal is made;

c) Free-throw, if the ball comes to rest in the goal-area or crosses the goal-line outside the goal;

d) play shall continue, if the ball, by itself i.e. without touching the goalkeeper gets out on the court again without leaving the playing-area (7:6).

7:8 Play shall continue if in the act of defence a player of the defending team touches the ball, which immediately afterwards is taken by the goalkeeper or comes to rest in the goal-area.

Rule 8 The Goalkeeper

The goalkeeper shall be permitted to:

8:1 in the act of defence touch the ball with all parts of his body inside his own goal-area;
he is, however, not allowed to use his feet or his legs below his knees, when the ball is moving towards the court (free-throw).

8:2 in his goal-area move about with the ball without any restrictions (see, however, 16:10);

8:3 leave his goal-area without the ball. On the court he shall follow the rules of the court players see, however, 8:12.
The goalkeeper is considered to have left his goal-area as soon as he touches the ground outside the goal-area-line.

Notice

■ *The goalkeeper playing in the court may at any time, with or without the ball, touch his own goal-area provided he is at the same time still touching the court with any part of his body. If the re-enters the goal-area with the ball, a penalty-throw shall be awarded (8:11).*

8:4 leave his goal-area and to play the ball in the court, if, in an act of defence, he tries to get the ball under control.
The goalkeeper shall not be permitted to

8:5 endanger any of his opponent by any act of defence (free-throw, or penalty-throw, 6:4–10);

8:6 intentionally play the ball the goal-area-line (free-throw) (5:11);

8:7 leave his goal-area with the ball under his control (free-throw);

8:8 touch again the ball outside his goal-area after a throw-out (7:5) or after a goal-throw (12:2) unless it has touched another player before (free-throw);

8:9 touch the ball lying or rolling on the ground outside his goal-area-line as long as he hinself is in the goal-area (free-throw);

8:10 take into the goal-area the ball when it is outside the goal-area (penalty-throw, 14:1 e);

8:11 re-enter his goal-area from the court with the ball under his control (penalty-throw, 14:1 e);

8:12 touch or to cross the halfway-line with any part of his body (free-throw; or penalty-throw 14:1 f).

8:13 If during the play a court player is going to substitute the goalkeeper (3:1), the referees shall be notified (penalty-throw).
The court player shall not enter the goal-area before it is left by the goalkeeper (penalty-throw). He shall in no way influence play when leaving the court, because he is not eligible to play (free-throw, or penalty-throw; in both cases he shall be disqualified for the rest of the game (3:3, 17:20).

The court player must change colours, before he enters the goal-area (free-throw, or penalty-throw).

Rule 9 Scoring

9:1 A goal is scored when the whole of the ball has passed over the opponent's goal-line between the goal-posts and under the crossbar, (plan 4), provided that in connection with the scoring no infringements of the rules were committed by the scoring player or by his teammates.
If the ball goes into the goal in spite of an infringement of the rules committed by a defending player, a goal is scored.

A goal made in the own goal is awarded to the opposing team. If the ball is carried behind the goal-line or dropped into the goal by the goalkeeper when he is taking a throw-out, a goal shall be awarded to the opposing team. (Except goal-throw!)

Notice

■ *The play is interrupted at the moment a referee or the timekeeper gives his signal, and if the whole of the ball has not passed over the goal-line between the goal-posts and under the cross-bar before the signal is started, a goal must not be allowed. If the ball is prevented from going into the goal by anybody or anything not authorized to be on the court, the referees shall award a goal if they are absolutely convinced that the ball would normally have passed over the goal-line into the goal.*

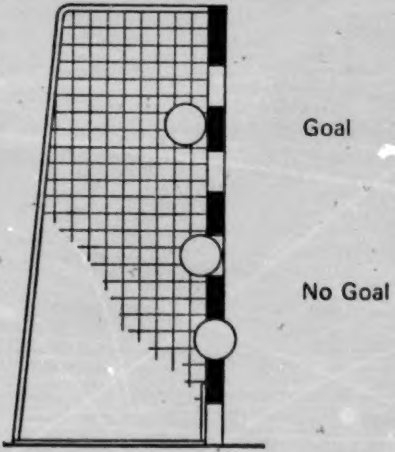


Fig. 4

9:2 After a goal has been scored, the game shall be restarted with a throw-on from the centre of the court by a player from the team conceding the goal.

Notice

If a goal has been scored, and the play has been restarted by a throw-on from the centre of the court, the goal shall not be disallowed.

Rule 9. Scoring

9:3 The team having scored the greater number of goals is the winner.

9:4 If both teams have scored the same number of goals or if no goal has been scored at all, the game is a draw.

GAME REPORT

Nature of Competition:

No. of Spectators:

Home team: ____________________

Visiting team: ____________________

Referees: ____________________

____

Date: ____________________ Time: __________

Location: ____________________

Timekeeper: ____________________

Secretary: ____________________

Home team lineup:							Visiting team lineup:						
No.	Name	Goals		Suspensions			No.	Name	Goals		Suspensions		
		1. half	2. half	1.	2.	fin.			1. half	2. half	1.	2.	fin.

Goal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
48	49	50																					

Goal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
48	49	50																					

Signature of Team Captain:

Signature of Captain:

Score: halftime (–) final (–)

Winner: ____________________

Signatures of Referees: ____________________

Rule 10 Throw-in

10:1 If the whole of the ball crosses the touch-line on the ground or in the air, the play shall be restarted by a throw-in (see, however, 5:11).

10:2 The throw-in shall be taken by a player of the team opposite to that of the player who has last touched the ball.

10:3 The throw-in shall be taken from the point where the ball crossed the touch-line.

Notice

■ *If a throw-in is taken from the wrong point, the referee shall blow his whistle to have the throw repeated from the right place.*

10:4 The throw-in shall be taken in direction of the court (16:1, 3, 5, 6, 8) and be executed without the referee blowing his whistle (see, however, 16:10). The thrower shall stand with both his feet outside the touch-line; he shall neither step on the touch-line nor enter the court before the ball has left his hand (free-throw).
The players of the defending team may, in any case, place themselves along the goal-area-line.

10:5 No goal can be scored (i.e. against the opponents) direct (commentary on 4:4) from a throw-in (goal-throw 12:16).

Rule 1[illegible] Corner-Throw

11:1 [illegible]he whole of the ball passes over the goal-line outside the goal, either in the air or on the ground, having last touched a player of the defending team, a corner-throw shall be awarded to the attacking team (see, however, 5:11). This rule does not apply to the goalkeeper in his goal-area (goal-throw, 12:1 a).

11:2 The corner-throw shall be taken within 3 seconds after the court-referee (17:7) has blown his whistle, from the point where the goal-line and the touch-line meet, on the side of the goal, where the ball went out (see 16:1, 2, 5–8).
The players of the defending team may place themselves along the goal-area-line.

Notice

■ *While taking a corner-throw the player shall keep one of his feet stationary on the ground (where the goal-line and the* *touch-line meet) till the ball has left his hand (free-throw). It is repeatedly permitted to lift and put down the other foot inside or outside the court again.*

11:3 A goal may be scored direct (commentary on 4:4) from a corner-throw.

Rule 12 Goal-Throw

12:1 *A goal-throw shall be awarded:*
  a) if the whole of the ball passes over the goal-line outside the goal, either in the air or on the ground, having last touched a player of the attacking team or the goalkeeper of the defending team in his goal-area;
  b) if the ball goes direct (commentary on 4:4) into the goal of the opposite team as the result of a throw-on (4:4), a throw-in (10:5) or a goal-throw (12:4).

12:2 The goal-throw shall be taken by the goalkeeper from his goal-area into the court (free-throw) (see also 16:3, 6–8).

Notice

■ *The goal-throw is considered taken when the ball has left the hands of the goalkeeper and crossed the goal-area-line. If the goalkeeper tries to take the goal-throw from outside his goal-area, the referees shall order him to enter the goal-area, and the referee has to blow his whistle before the goal-throw can be taken within 3 seconds (free-throw).*

12:3 The goal-throw may be taken in any way preferred by the goalkeeper.

12:4 No goal can be scored (i.e. against the opposing team) direct (commentary on 4:4) from a goal-throw (goal-throw).

12:5 The players of the opposing team must neither enter the area between the free-throw-line and the goal-area-line nor even touch the free-throw-line before the goal-throw has been taken by the goalkeeper (free-throw) (18:8).

Rule 13 Free-Throw

13:1 A free-throw shall be awarded:
  a) for faulty entering or leaving the playing ground (3:1, 3, Notice 5, Notice 6);
  b) for faulty throw-on (4:2, 3);

c) for infringements of the rules (5:4, 8–10);
d) for intentional playing of the ball across the touch-line or the goal-line outside the goal (5:11);
e) for infringements of the rules 6:4–9 (approach to opponents);
f) for infringements by court players of the rules 7:2 a, b; 4;
g) for intentional playing of the ball into one's own goal-area (7:7 c);
h) for the goalkeeper's infringements of the rules 8:1, 5–9, 12;12:2; 16:9;
i) for infringements of the rules 10:4; 16:5, 6, 8 (throw-in);
j) for infringements of the rules 16:1, 2, 5, 6, 8; Notice 11:2 (corner-throw).
k) for infringements by the attacking team of the rules 12:5; 16:6, 8 (throw-off);
l) for infringements of the rules 13:3, 16:5, 6, 8 (free-throw);
m) for infringements of the rules 14:2, 3, 5 c; 16:2, 5 (penalty-throw);
n) for infringements of the rule 15:3 (referee's-throw);
o) when the game is interrupted (see commentary on 15:1);
p) for ungentlemanly conduct (17:13, 14, §4);
q) for timewasting (17:21).

13:2 The free-throw may be taken immediately, without any of the referees blowing his whistle (see, however, 16:10) from the place where the infringement occurred (see also 16:1, 3, 6–10).

If the infringement was committed by a player of the defending team between his goal-area-line and the free-throw-line, the free-throw shall be taken from the nearest point outside the free-throw-line.

When the player taking the free-throw has taken the correct position, he shall not be permitted either to put the ball on the ground or to bounce it (free-throw).

13:3 The players of the attacking team shall neither touch nor cross the free-throw-line of the opposing team before the free-throw is taken (free-throw).

Notice

■ *If some of the thrower's team-mates are placed between the free-throw-line and the goal-area-line when the free-throw is taken, and if their position may have any influence on the play, the referees shall interrupt the game and order the* *wrongly placed players to move to the other side of free-throw-line. Then the game shall be restarted after the correct position having been accepted by the referees (referee to blow his whistle) (13:2; 16:3).*

13:4 When a free-throw is to be taken from the free-throw-line, the players of the defending team may place themselves immediately at their goal-area-line.

13:5 A goal may be scored direct (see commentary on 4:4) from a free-throw.

13:6 The referees shall not award a free-throw if an interruption of the game might be a disadvantage for the attacking team.
If the player of the attacking team loses the control of the ball because of an infringement being committed by a player of the defending team, the referees shall award a free-throw at least.
If the player of the attacking team keeps full control of the ball in spite of an infringement being committed by a player of the defending team, the referees shall not award a free-throw.

Rule 14 Penalty-Throw

14:1 *A penalty-throw shall be awarded:*

a) for serious infringements of the rules 6:4–10, committed on one's own half of the court;
b) for serious infringements of the rules 3:3, 6, 7; 6:4, 5, 7–10 committed in any part of the court when destroying a clear chance of scoring a goal;
c) if a player intentionally enters his goal-area for defensive purposes (7:2 c);
d) if a player intentionally plays the ball into his goal-area and the ball touches the goalkeeper (7:7 b);
e) if the goalkeeper carries or takes the ball into his own goal-area (8:10, 11);
f) if a clear chance of scoring a goal is destroyed by the goalkeeper on the opposite half of the court (8:12);
g) for faulty substitution of the goalkeeper (8:13).

14:2 The player taking the penalty-throw shall neither touch nor cross the penalty-throw-line before the ball has left his hand (free-throw; see 16:1, 2, 5, 6, 8, 9).

Notice

- *If a suspended or excluded player enters the court and takes the penalty-throw, he shall be disqualified for the rest of the game (17:20) and the penalty-throw shall be repeated.*
While a penalty-throw is being taken opponents shall not try in any way to make the thrower nervous or to disturb him. Offenders shall be cautioned, possibly suspended or even excluded for the rest of the game (17:13, 14, 15, 18), and if no goal was scored, the penalty-throw shall be repeated.

14:3 When taking a penalty-throw the thrower shall throw the ball in the direction of the goal of the opposing team (free-throw).

14:4 While the penalty-throw is being taken, all players, with the exception of the thrower, shall be outside the area between the goal-area-line and the free-throw-line.

14:5 If a player of the attacking team touches or crosses the free-throw-line before the ball has left the thrower's hand, the referees shall award as follows:
a) the penalty-throw to be repeated if a goal was scored;
b) goal-throw if the ball passed over the goal-line outside the goal;
c) free-throw in favour of the defending team if the ball bounces back on the court from the goalkeeper, a goal-post or the cross-bar;
d) If the goalkeeper stops or keeps the ball, or if the ball remains in the goal-area, the game shall be continued with a throw-out.

14:6 If a player of the defending team touches or crosses the free-throw-line before the ball has left the thrower's hand, the referees shall award as follows:
a) goal, if it was the result of the throw;
b) the penalty-throw to be repeated in all other cases.

14:7 While the penalty-throw is being taken, the goalkeeper may move in his goal-area as much as he likes; he shall, however, not be nearer to the thrower than 3 meters, i.e. he shall not in any way cross the line drawn in the goal-area (nor its projection on either side) (1:3) until the throw has been taken, and if he infringes this rule, the penalty-throw shall be repeated if it did not result in a goal.

14:8 The referees shall not award a penalty-throw if an interruption of the game might be a disadvantage for the attacking team. A penalty-throw shall always be awarded if by an infringement of a rule, a clear chance of scoring a goal is destroyed, i.e. if no goal is scored.

If the player of the attacking team keeps full control of the ball and his body, in spite of an infringement being committed by a player of the defending team, the referees shall not award a penalty-throw.

Rule 15 The Referee's Throw

15:1 *The game shall be restarted with a referee's-throw:*

a) if the referees have interrupted the game because both teams simultaneously infringed the rules;

b) if the ball touches the roof or any obstacle fixed on it above the court;

c) if the game has been interrupted when no team was in possession of the ball, without any infringements of the rules being committed (6:11).

d) if half-time is signalled too early and the players have already left the court (4:8).

Notice

■ *If the game has been interrupted when one of the teams was in possession of the ball without any infringement of the rules being committed, the game shall be restarted with a free-throw to be taken (from the point where the ball was when the game was interrupted), by the team having been in possession of the ball (13:2–6; 16:4–8).*

15:2 The referee's-throw shall be taken by the court-referee bouncing the ball vertically on to the point of the ground where the play was interrupted (17:7). If this point should be between the goal-area-line and the free-throw-line the referee's-throw shall be taken from the nearest point outside the free-throw-line. The position of the players is the same as given in 13:3,4. The referee does not need to blow his whistle (see, however, 4:8).

15:3 While the referee's throw is being taken, no players shall be nearer to the referee than 3 m, before the ball has touched the ground (free-throw).

Rule 16 How to take the throws

16:1 Before a throw is taken the ball must rest in the thrower's hand, and the positions of the players shall be in accordance with the rules of the game (see, however, 16:8).

Notice

■ *Only the thrower shall be permitted to touch the ball before the throw is taken. The referees shall correct all mistakes made.*

16:2 Throw-on, corner-throw and penalty-throw shall be taken not later than 3 seconds after the court-referee has blown his whistle (17:7) and the thrower shall not first put the ball on the ground or bounce it (free-throw, 4:2, 11:2). The ball may be thrown in any direction (except penalty-throw 14:3).

16:3 Throw-in, goal-throw, and free-throw may be taken immediately, without the referee blowing his whistle (see, however, 16:10), (10:3, 4; 12:2, 3; 13:2).
If these throws are taken before the positions of the players are in accordance with the rules, and if the wrong positions may influence the game, the referees shall interrupt the game, correct the wrong positions, and then blow the whistle for the game to go on (16:10).

16:4 If the game is interrupted owing to notice 15:1, cautioning (17:13), suspension (17:14, 15, 16), exclusion (17:15 c; 18; 19), disqualification (17:20), or time wasting (17:21), or warning of a player, the referees shall restart the game by blowing the whistle.

16:5 When taking the throw-on, the throw-in, the corner-throw, the free-throw, and the penalty-throw the thrower shall keep one of his feet stationary on the ground till the ball has left his hand (free-throw). He is permitted, however, to repeatedly lift and put down the other foot again (4:2; 11:2; 13:2; 14:2).

16:6 Having taken a throw-on, a throw-in, a corner-throw, a goal-throw, or a free-throw the thrower shall not touch the ball again before it has touched another player, or a goal-post, or the cross-bar (free-throw).
When a penalty-throw has been taken, the ball shall not be touched by any player till it has touched the goalkeeper, a goal-post, or the cross-bar (14:3) (free-throw).

16:7 When taking a corner-throw, a goal-throw, or a free-throw the thrower may hold his hand with the ball outside the boundary lines provided his position on the playing area is in accordance with the rules (11:2; 12:2, 3; 13:2).

16:8 When the above mentioned throws are being taken the opponents shall be at least 3 m from the thrower until the ball has left his hand (free-throw).

Notice

■ *Faulty position of the players of the opposing team shall not be corrected by the referees if the immediate taking of the throw gives an advantage to the throwing team.*
If this is not the case, the wrong position shall be corrected first. If a player tries to delay the taking of a throw by getting too near to the thrower or by committing any other infringement he shall be cautioned. In case of infringements being repeated, the player(s) concerned shall be suspended or excluded from the game (17:13–18).

Notice

■ *If the referees blow their whistles although a/some player(s) of the opposing team is/are wrongly placed, the player(s) concerned shall be entitled to actively take part in the play and the wrong position shall not be penalized after having been accepted by the referees.*

16:9 A throw is considered to be taken when the ball has left the hands of the thrower (see, however, commentary on 12:2).

Notice

■ *While taking a throw the player shall throw the ball, not hand it to a team-mate.*

16:10 If the taking of the throw-out, the throw-in, the goal-throw, or the free-throw is intentionally delayed, the referee shall blow his whistle and the throw must be taken within 3 seconds (free-throw).

Rule 17 The Referees, the Scorer, and the Timekeeper

17:1 Every game shall be conducted by two referees (having the same rights each), assisted by a Scorer and a Timekeeper.

17:2 The referees shall be in charge of the game from the moment they enter the playing-area until they have left the playing-area, the dressing-rooms, etc. (i.e. the building, or the whole area in which the handball-match took place).

17:3 The referees shall examine the condition of the playing-area before the beginning of the game. In cases of disagreement, the referee officially named first has the right to decide.

17:4 In principle a game shall be fully conducted on by the same two referees. They are both responsible for the game being played in accordance with the rules. Both referees have the right and the duty to interrupt the game whenever they ascertain an infringement of the rules.

17:5 The toss shall be made by the referee named first, before the game is started and in the presence of the other referee and of the captains of the teams. The team winning the toss shall have the option of ends or throw-on.

17:6 Before the start of the game the referee named second places himself as "court-referee" on that half of the court from where the throw-on shall be taken. He shall blow his whistle for the throw-on.
If the ball gets into possession of the team that has not taken the throw-on, he shall become "goal-line-referee" and places himself at the goal-line of his half of the court.
The other referee shall begin as goal-line-referee at the goal-line in his half of the court, and shall become court-referee as soon as the team of his half becomes the attacking team. The referees shall change halves during the game.

17:7 The court-referee shall first and foremost watch the play on the court and shall always be as near the ball as possible.
He shall blow his whistle:
a) to start the play;
b) when an infringement is committed (see, however, 13:6 and 14:8);
c) when the ball has crossed the touch-lines on his side (10:1);
d) for a throw-on, a corner-throw, and a penalty-throw to be taken, as well as for the throw-out, the throw-in, and the free-throw to be taken according to 16:10;
e) to stop ungentlemanly play (17:13);
f) to stop ungentlemanly conduct against the referees, officials, and players (17:14);

g) to interrupt time-wasting (17:21);
The court-referee shall take the referee's-throw.

17:8 the goal-line-referee shall blow his whistle:
- a) when the goal-area is being entered by any player (7:2);
- b) when a goal is scored;
- c) when the ball has crossed the touch-line on his side (10:1);
- d) when the ball has crossed the goal-line (11:1; 12:1).

17:9 If the referees give different decisions for foul against the same team, the stronger of the decisions shall be enforced.

17:10 If the game is interrupted and the referees give contradictory decisions about the team to be penalized, the decisions of the court-referee shall be enforced.

17:11 Both referees shall count the goals. They have to keep record of players being cautioned, suspended, excluded, or disqualified.

17:12 Both referees have the right to interrupt the game temporarily or finally.
Their decisions based on facts shall be final.
It is only permissible to the captain, to appeal against decisions which are against the rules of the game.

17:13 In case of ungentlemanly playing and if infringements are being intentionally repeated, the referees shall not only award a free-throw, but caution the faulty player as well.
If the ungentlemanly playing or infringement is repeated, the player shall be suspended (17:16) or excluded (17:18).
In case of serious infringement the player(s) may be suspended or excluded without being previously cautioned.

Notice

- *If the referee wants to caution a player or an official, he must use the word "caution", and he must also with his clenched fist lift one of his arms into the air in such a way that it is distinctly seen by the players and by the spectators that a caution has been given.*

17:14 In case of ungentlemanly conduct on or outside the playing area, the referees shall caution the faulty player.
If the ungentlemanly conduct is repeated, the player on the playing-area shall be suspended (17:16) or excluded (17:18), the player outside the playing-area shall be disqualified

(17:20). Officials who are in the place of the substitutes may also be cautioned or disqualified (17:20) by the referees.

In case of serious infringement the player(s) may be suspended (17:16), excluded (17:18), or disqualified (17:20) without being previously cautioned.

If the game has been interrupted owing to ungentlemanly conduct it shall be resumed by a free-throw to be taken by the team that has not committed the infringement.

In case of ungentlemanly conduct during the interruption of the game, the game shall be resumed by the throw corresponding to the first cause of interruption.

17:15 Ungentlemanly conduct on the whole of the playing-area (see 17:2) (players or officials) against the referees shall be penalized as follows:

a) before the game: cautioning (17:13) or disqualification (17:20); the team may play with 12 players);
b) during the game: free-throw, cautioning or suspension or exclusion (17:13, 16, 18);
c) during the interval: cautioning (17:13) or disqualification (17:20);
d) after the game: cautioning and written report.

17:16 Players may be suspended for 2 to 5 minutes. Suspended players shall not be substituted during the time of suspension. Should a player be sent off the ground a second time, he shall be suspended for 5 minutes, if he has committed the same or a similar infringement.

In all other cases, the explusion shall be for 2 or 5 minutes according to the kind of infringement the player has committed.

Should a player be sent off the ground a third time, he shall be disqualified (17:20). Time of expulsion: 5 minutes.

The faulty team shall play with 6 players during the time of expulsion.

No disqualification for faulty substitution of players (3:7).

If the time of suspension has not expired by the end of the first half, the rest of the suspension must be taken from the beginning of the second half.

If the time of suspension has not expired by the end of the game, and extra periods shall be played (4:9), the rest of the suspension must be taken from the beginning of the extra period.

Suspended players shall remain in the place of the substitutes. The suspension shall be distinctly notified to the faulty player and to the time-keeper.

Notice

- *The time of suspension begins:*
  - *a) when the referee blows his whistle for the play to go on, if it was interrupted;*
  - *b) when the suspended player crosses the touch-line, if the game was not interrupted.*

17:17 The timekeeper shall notify the end of the time of suspension to the coach of the offender's team.

17:18 The excluded player may not resume play and may not be substituted. He shall leave the place of the substitutes.
In case of serious infringements, the player(s) may be excluded without being previously suspended.
The exclusion shall be directly notified to the faulty player, his coach, and the scorer.

17:19 If the goalkeeper is suspended or excluded, the substitute goalkeeper may take his place. In that case one of the court-players shall leave the court.

17:20 A disqualified player is excluded for the rest of the game and has to leave the place of the substitutes; a disqualified official shall also leave the place of the substitutes.
If a player is disqualified, his team may play with the same number of players on the playing-area and with the remaining substitutes.
The disqualification shall be notified directly to the faulty player, his coach and the scorer.

17:21 If a team intentionally delays the progress of play and obviously refrains from attempting to score a goal, it is time wasting and the referees shall award free-throw to be taken from the point where the ball was, when the game was interrupted (13:15, 17:7).

17:22 Intentional delaying of the progress of the game (e.g. throwing away the ball) is considered as ungentlemanly conduct (17:14).

17:23 Only the referees shall be permitted to wear black dress.

17:24 The scorer shall keep the record of the game and together with the timekeeper he shall also control the entering of the players.

17:25 The Timekeeper shall control:

a) the time;
b) the substitutes entering and leaving the playing-area;
c) the time of suspensions;
d) together with the Scorer, the entering of players.

The Timekeeper shall also give a loud and distinct signal for the end of half-time and for the end of the game (see, however, 4:6–8).

The duties of the Timekeeper and of the Scorer can be entrusted to one person.

17:26 The Referees, the Scorer, and the Timekeeper are obliged to have a solid knowledge of the rules of the game and to apply them in a sporting spirit.

The United States Team Handball Federation

EDWARD SERRAPEDE

Edward Serrapede is secretary of the United States Team Handball Federation, member of the U.S. Olympic Women's Team Handball Sports Committee, secretary of the U.S. Olympic Men's Team Handball Sports Committee, and manager of the U.S. women's national team. He is also a member of the Adelphi Team Handball Club and winner of four men's national championships, 1971-1974.

History

The United States Team Handball Federation (USTHF) is the national sports governing body for team handball. It was founded in 1959 and in 1962 became a member of the International Handball Federation, Basel, Switzerland. In 1968 it became a member of the United States Olympic Committee (USOC) and because it represents an active Olympic sport, it is a Group A member. The Federation's address is 10 Nottingham Road, Short Hills, New Jersey 07078. Its current officers are: president, Peter Buehning; vice-presidents, Elmer Edes and Karl Steingruber; treasurer, Laurence Montgomery; secretary, Edward Serrapede.

The USTHF was started by club teams lossely organized on lines of national origin. A large majority of the players had learned the game in Europe and wanted to continue to play either indoor or outdoor handball in the United States. League play was organized in the metropolitan New York-New Jersey area and the first men's national team was selected to play in the 1963 Field Handball World Championships in Switzerland. This was the only outdoor world championship that the United States ever competed in. The last outdoor world championship was held in 1966 and now only indoor handball is played on an international level.

The USTHF originally was an organization composed almost exclusively of players and referees. Only in the last six or seven years has it begun to have organizations and schools as members. Because almost all of its original members were men, its first participations in the indoor world championships were by men's teams. These teams were selected and trained to participate in the qualifications for the 1964 World Championship in Czechoslovakia, the 1967 World Championship in Sweden, the 1970 World Championship in France and the 1974 World Championship in the German Democratic Republic. Our men's teams qualified and competed in all these events except for the 1967 World Championship. It was only after women's team handball became an Olympic sport that the resources and funds become available to field a women's team in the world championships. As part of its Olympic preparations, a United States women's team competed for the first time in the 1975 World Championship in the Soviet Union.

Field or outdoor team handball was part of the 1936 Olympic Games in Berlin. Team handball did not reappear in the Olympics until the 1972 Games in Munich in which 16 men's teams competed in indoor team handball. After this successful introduction of the sport, women's team handball was added to the list of permanent Olympic sports beginning in 1976. The Montreal Summer Olympics will see 6 women's and 12 men's teams competing for medals.

Before team handball became a permanent Olympic sport, most of the athletes on the national teams came from the clubs associated with the New York-New Jersey Metropolitan League. However, since 1968, when preparation for the 1972 Olympics began, increased interest in the sport and funding provided by the USOC have made practical a nationwide search for players of international caliber. The men's 1970 and 1975 world championship teams and the men's 1972 Olympic team were composed of players who had learned the game in their local club or in an extensive program for men's junior and senior players conducted by the Army under the leadership of General Westmoreland, then chief of staff. For the first time, a relatively large pool of team handball players existed from which to select a men's national team. The result was players with greater individual athletic talents and a more competitive team.

Women's Teams

In early 1973, when plans were being made to field a women's team in the 1976 Montreal Olympics, only two or three club teams existed in the entire country. Thus, there was an insufficient number of female team players of international caliber for a national team. Therefore, the United States Olympic Team Handball Sports Committee and the USTHF adopted a program to identify superior women athletes, assemble them in training camps and teach them team handball.

Thousands of letters were sent to athletic directors and coaches of women's sports asking them to recommend their best athletes were screened and the most promising aspirants were asked to provide the results of a number of standardized tests of athletic provide the results of a number of standardized tests of athletic ability. The best of these were invited to three selection camps, two of which were held at Iowa State University, Ames, in 1974 and one at Lock Haven State College, Lock Haven, Pennsylvania, in early

1975. At these camps the vast majority of the candidates numbering over 100, received their first introduction to team handball.

Finally, a training squad of 25 athletes was selected to attend additional camps and play in games on trips to Iceland and Denmark. The selection process was not terminated at this point – a small number of new candidates with great potential were invited to later camps to see if they could qualify for the training squad. After eight months of training, a team was selected to play Canada in the qualifications for the 1975 World Championships. Our women's national team won this qualification series. Following two training camps in the summer and fall of 1975 and participation in a pre-Olympic tournament in Montreal, the team traveled to Europe. There it finished 11th out of 12th in the World Championship Games held in the Soviet Union. Currently, the women's team has a good chance to qualify for the 1976 Montreal Olympics by winning an intercontinental qualification tournament that will include the Asian, African and American champions. This qualification will take place just before the Olympics and our team's probable opponents will be the Japanese and the Tunisians.

USTHF Functions, Organization

In addition to preparing national teams, the USTHF also sanctions the women's, men's and junior's national championships. The Federation also arranges visits of foreign teams to participate in both qualification and exhibition games. It has hosted teams from Argentina, Canada, Germany, Mexico and Sweden. Team handball is an international sport and all major tournaments involve teams from different countries. The visiting teams always provide their own travel to and from the host country, while the host makes all the arrangements and assumes all the costs in its own country. The Federation has a great many offers from foreign teams that wish to play in the United States and it is willing to arrange exhibition or qualification games at any suitable site in the United States as long as it receives local support.

Team handball has grown quite rapidly in this country in only 15 years, and the United States' record in international competition has been one of steady progress. To provide an up-to-date structure for this progress, the USTHF has recently adopted a new constitution. Players and teams are represented on a state-by-state basis and national sports and educational organizations may represent themselves directly in the Federal congress. This congress meets biannually and selects a board of directors to oversee the sport in the United States. The directors also select an executive committee to attend to the Federation's day-to-day business. A biannual organization was chosen because the major international team handball competitions have just recently been rescheduled so that the men's and women's world championships now occur two years after each Olympics. Thus national team preparations fall into two year-long schedules.

The USTHF intends to continue to improve team handball in the United States and one day expects to field an Olympic or world championship medal winner. We invite you to join us in achieving this goal.

UNITED STATES TEAM HANDBALL FEDERATION
10 Nottingham Road **Short Hills, N.J. 07078**
Tel. 201-379-1143

APPLICATION FOR MEMBERSHIP

Member: International Handball Federation United States Olympic Committee

The following club/college/school/military organization/individual would like to apply for a membership in the USTHF for the period
January 1, 19 – December 31, 19

club/college/school/military organization/individual

street city state zip code

phone, business & home birth date sex citizenship

signature

☐ The membership fee is enclosed.

☐ Please include USTHF ( ) Emblems @ $1.50 each

ACTIVE MEMBERSHIP	**Annual Dues**
☐ Clubs, colleges, schools, military organizations having teams competing in USTHF sanctioned play (other than intramural competition)	$20.00/Sr. team $10.00/Jr. team

☐ **Individuals**

–any individuals participating in USTHF sanctioned play, other than intramural competition

( ) officials, referees, instructors	$ 5.00 each
( ) adult players	$ 3.00 each
( ) junior players (under 18)	$ 1.00 each

ASSOCIATE MEMBERSHIP

☐ **Colleges, schools, military organization**	$25.00/assoc.

–associations engaged in team handball on an intramural or academic basis only, membership makes these organizations eligible to receive technical and organizational assistance from USTHF, to participate in USTHF development programs, and to receive USTHF newsletter and other information.

☐ **Individuals**	$ 5.00/year

–individuals not actively engaged in USTHF sanctioned play, but desiring to support activities of the USTHF. Membership entitles individuals to receive USTHF newsletter and other information.

Note: If registering a team, list name and addresses and birth date of players on back of this form.

Simplified Rules of Team Handball

FLORENCE E. WATSON

A physical education teacher at Warrington Middle School in Pensacola, Florida, Florence Watson received a B.S. degree from Troy State University, Troy, Alabama, and M.A. degree from the University of South Alabama, Mobile.

Concept of the Game

Handball is a team sport, with two teams playing against each other. Each team consists of 12 players (10 court players and 2 goalkeepers) of whom no more than 7 play at a time. The 5 remaining players are substitutes. Only the goalkeeper is allowed inside the goal area.

The players of each team try to *throw* the ball into the goal of the opposing team and to defend their own goal against the attacks of the opponents. The ball is played with the hands, but it may be touched or played with any part of the body, *except* the legs below the knees and the feet. A player may move a maximum of three steps while holding the ball and may dribble the ball repeatedly with one hand when running, walking or standing. The ball may be held for a maximum of three seconds.

The game is started with a *throw-on,* taken from the center of the court. A goal is scored when a player has thrown the ball into the goal of the opposing team. After a goal has been scored, the game is restarted with a throw-on from the center of the court by a player of the team against whom the goal was scored.

Players

The players assigned as goalkeepers cannot be used as regular court players; court players, however, can become goalkeepers; a court player acting as a goalkeeper, may at any time become a court player again. Substitutes may join the game at any time and as often as wanted without notifying the time keeper. The players to be substituted must have left the court before the substitutes enter. Faulty substitution of player shall be penalized by a free throw for the opposing team to be taken from the place where the substitute actively joined the play.

Length of Game

There are two equal periods of 20 minutes with an intermission of 10 minutes. When the referee has started the game by blowing the whistle the throw-on shall be made within 3 seconds from the center of the court in any direction. At the time of the throw-on all players shall be in their own half of the court and all players of the team opposing that of the thrower shall be not less than 10 feet away from the thrower until the ball has left her hand. No goal can be scored directly from a throw-on.

Playing the Ball

It shall be permitted:

1. To stop, catch, throw, knock, or strike the ball in any manner and in any direction by using hands (fists or open hands) arms, head, body, thighs or knees
2. To hold the ball for a maximum time of three seconds, even when it is lying on the ground
3. To take a maximum of three steps while holding the ball
4. To bounce the ball with one hand repeatedly, dribble the ball, while standing or running
5. To roll the ball on the ground repeatedly with one hand
6. To pass the ball from one hand to the other
7. To stop the ball with one hand or both hands and then catch it as long as the player does not gain space (change her position)
8. To pass the ball when kneeling, sitting or lying on the ground
9. To play the ball out of the hand of an opponent from any direction using one open hand

It shall be prohibited:

1. To touch the ball more than once, unless in the meantime it has touched the ground, another player or the goal
2. To touch the ball with any part of the leg below the knee, or with the foot, except when the opponent throws the ball at the player's foot
3. To dive for the ball lying or rolling on the ground, except for the goalkeeper in her own goal area
4. To rip away with one or two hands or to knock away the ball from the hands of the opponent
5. To grab an opponent, to hold her with one or both arms, to stop her with the hands, to hit, shove, tackle her, to jump into her, to trip her, to throw oneself in front of her or to endanger her in any way.

Goal Area

1. Only the goalkeeper is allowed to enter or to be in the goal area, which includes the goal-area line.
2. Penalties for entering the goal area are:
    - a. free throw, if the court player is in possession of the ball
    - b. free throw, when the court player is not in possession of the ball, but gains a clear advantage by entering the goal area

c. penalty throw, if a court player of the defending team intentionally and clearly for the purpose of the defense enters the goal area

3. Goalkeeper may leave the goal area without the ball.
4. Goalkeeper may not leave the goal area with the ball under her control
5. After a goal has been scored, the game shall be re-started with a throw-on from the center of the court by a player of the team against which the goal has been scored.

Throw-in

If the entire ball crosses the sideline on the ground or in the air, the play shall be re-started by a throw-in. It shall be executed from the point where the ball crossed the sideline by a player of the team who did not touch the ball last. If the throw-in is taken from the wrong place, the referee shall blow the whistle and have the throw-in repeated from the right place. The thrower shall face the court and stand with both her feet outside the sideline. She shall use both hands and deliver the ball from over her head (free throw).

Corner Throw

If the entire ball crosses over the goal line outside the goal, either in the air or on the ground, having last touched a player of the defending team, a corner throw shall be awarded to the attacking team. A goal may be scored directly from a corner throw.

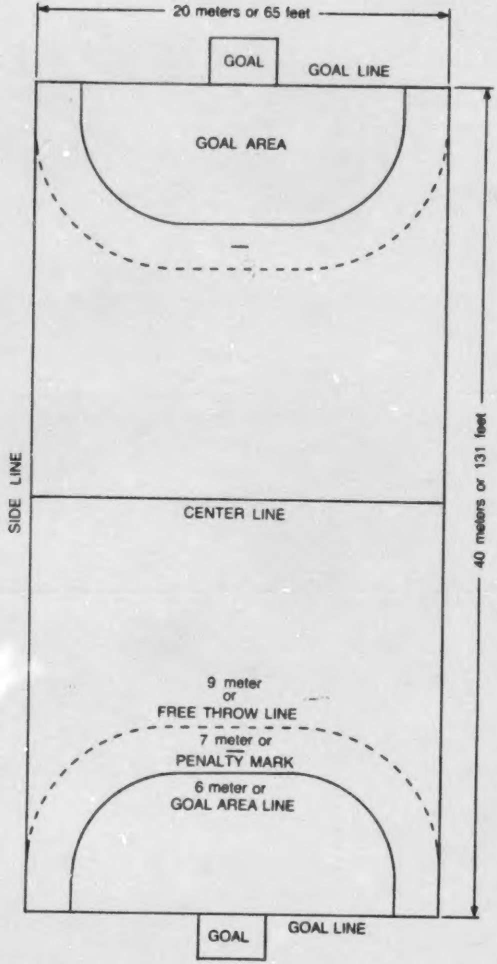
Free throw

A free throw shall be awarded for faulty: substitution; throw-on; infractions of rules regarding playing the ball, the throw-in; the free-throw; the penalty throw; and unsportsmanlike conduct. The free throw is executed, without the referee blowing the whistle, from the place where the infraction occurred. A goal may be scored directly from a free throw.

The Ball

The ball shall be spherical and have a rubber bladder and the outer casing of leather of one color. It must not be inflated too hard. The ball for women, female and male youths shall weigh not more than 14 ounces and its circumference shall be not more than 22 inches. For beginners, playground balls with the approximate circumference can be substituted.

THE COURT


20 meters or 65 feet
GOAL
GOAL LINE
GOAL AREA
SIDE LINE
CENTER LINE
40 meters or 131 feet
9 meter or FREE THROW LINE
7 meter or PENALTY MARK
6 meter or GOAL AREA LINE
GOAL
GOAL LINE

Introducing Team Handball To Beginners

JEAN MONTACER

Jean Montacer received her B.S. degree from Southern Connecticut State College, New Haven. Directly after graduating, she entered the Peace Corps as a physical education instructor. Upon returning from Tunisia she began to teach and coach at Southern Connecticut State College. In July 1974, she participated in the national team handball selection camp held in Iowa and was selected to the United States team.

When introducing team handball to beginners, the instructor must keep in mind only the basics. Beginners on any level, (elementary or college) probably have never heard of the game, much less seen it played. Teaching the basics will keep the game simple to understand. Patience and many modifications will be needed to help the beginner find immediate success and enjoyment.

If at all possible, good use of visual aids at the onset of class will give the beginner a mental picture of the game and several skills. Films of the basic passes, shooting techniques and offensive and defensive patterns are available from the United States Team Handball Federation, 10 Nottingham Road, Short Hills, New Jersey 07078. Photos or drawings that the instructor can provide may be easier for the younger players to understand.

When introducing a new activity into the curriculum, money for equipment is often the biggest factor. The goal cages and balls may be purchased from the beginning, but they really are not necessary if a little bit of ingenuity is used. The goal cage can be chalk lines on the wall or a makeshift goal cage can be easily constructed from two standards, a crossbar of some kind, and a net to eliminate the immediate return of the ball. Boxes provide a good target when arranged to resemble the size of the goal. For the smaller children, a modification on the size of the cage may be necessary. Any ball that approximates the official size for each age group can be used, such as a playground ball. In fact, the playground ball may be the best ball for teaching younger children and beginners. It is light and easy to handle and the children will not be afraid of it as they might be when using the official ball. The court size can be modified according to the size and availability of gymnasium space. The instructor may consider taking the game outdoors onto the grass or clay courts.

In teaching team handball to beginners, the basic skills and techniques must be stressed before any advanced skills are learned.

Passing

Passing and catching are of equal importance in team handball and one should not be emphasized without the other. The most basic and easiest pass to learn is the one-handed shoulder pass. When teaching any throwing action, the skill is usually taught first without movement. Emphasis is placed on proper grip and throwing motion. Along with the throwing, instruction on catching the ball with *two* hands should be stressed. It is important to get the ball under control. After the pass can be performed from a stationary position, the three-step approach can be introduced. It is important that every student realizes the importance of the three steps *before* passing, since they increase the players' mobility and encourage good positioning. Line drills and circle drills that may be used for other sports are often effective practice for team handball.

Although a player can dribble in team handball, its use should be minimized when instructing beginners. Because of their previous experiences in basketball, many beginners will dribble the ball unnecessarily. In early games, limit the dribble or ban it altogether. The result will be a cleaner, better moving game.

Shooting

Shooting at the goal is the most exciting and spectacular part of the game. Care must be taken in deciding which shots to introduce to beginners and which shots to omit. The shot most basic to the game is the standing throw or set shot. The set shot can be taught right after the pass is taught, as the three-step approach is the same. Rather than passing at the end of the three steps, a shot at the goal is taken. After some practice with the technique, the distance from the goal and the angle of the shots can be varied. Placement of the shots in the corners of the goal should be stressed at all times. For precision shooting, the instructor may place high and low targets against a wall for students to shoot at from various distances.

The jump shot is another basic shot. Again, three steps are taken to prepare for the shot with the final step propelling the body into the air. In preparing for the jump shot, the student might be instructed to take three steps and on the third step lift the opposite hand straight up in the air. The next progression would be to hop on the last step. The last step-hop for the jump shot is the same technique used for a lay-up shot in basketball.

The jump shot is used to shoot over the defense or to penetrate through the defense to get closer to the goal. In team handball, the court players can only be within the six meter line if they are in the air. The jump shot enables the shooter to leave the ground at the six-meter line, jump toward the goal, and shoot while in the air. The closer the shooter is to the goal, the less time the goaltender has to react to the shot.

Penetrating the defense, jumping, and shooting might be difficult for young children. One way to introduce this skill is to place two cones on their sides and facing each other so the tips meet or overlap. This creates a small barrier that reminds the children to jump up and forward when shooting the jump shot.

There are several other advanced shooting techniques in team handball. However, the instructor of beginning players should dwell mainly on the basic skills.

Goaltending

Goaltending in team handball is intricate but can be simplified to match the skill level of the players involved. Use of the hands and feet to block high and low balls should be taught first. The beginner should not try to catch the ball but should try to block it.

Playing the Game

Once the basic skills have been learned, a modified game can be played. To begin, three court players and a goaltender will form one team. The court might have to be modified so as to narrow the width. Certain rules may need to be explained at this point. Entering the circle on offense and defense, sideline rules, and traveling should be explained carefully. To set up the defense and offense, alleys may be used. This will keep the players organized and eliminate any confusion as to positions. With alleys, the defense will have to play in a zone. At this point, dribbling may be eliminated so the players will be forced to use the three steps and pass more quickly. When the students start to play, the change from offense to defense after losing the ball may be a bit confusing. Careful explanation and patience will make this transition less complicated.

After the players have learned the four-against-four, a fifth player can be added. This player would be the pivot or circle runner. Once again, time must be taken to explain and demonstrate the position of the pivot. Correct stance is important. The pivot must have her hands in position to receive the ball at all times. Movement generally coincides with ball movement out on the court. If the ball is on the right side, so is the pivot. The pivot should be on an angle with the goal cage in a ready position to receive the pass.

On the elementary level, five-on-five may be all the children can understand. When playing with seven players, the game might become too confusing. For the higher grades, basic offensive and defensive patterns for a seven-player team may be taught.

Offense

Adding two wings to the five-player team equals a full size team. Perhaps the easiest pattern to understand is the basic 3-3 offense. This involves three backcourt players and three forecourt players. The backcourt players are the left backcourt, center backcourt and right backcourt. The forecourt players are the left wing, pivot or circle runner and the right wing. When introducing the 3-3 offense, it is easier to assign each person to a position. Describe where that position is and what shots can be taken from the position. Keep the players in the position and once again alleys may be used. This will cut down on the confusion when changing from offense to defense. Ball movement is important to keep the defense shifting. Stress the fact that dribbling only slows the game down and gives the defense a change to recover.

Defense

A basic 6-0 defense is best to use when first introducing the defense. The 6-0 means that every player is near the circle or goal area line. A player comes off the six-meter line to defend against a shot from the backcourt in her area. Use of the zone defense will eliminate any confusing shifting or unnecessary movement. Instruction must be given on how to defend in team handball. The best way to do that is to relate the skill to that of basketball. The use of body blocking should be the only method taught to beginners. The arms are used to block the shots of the defense. Shifting with the movement of the ball must be stressed. As the defense shifts, the space among all six players should be equal. The principles of a zone defense in basketball are similar to the basics of the 6-0 defense in team handball. Each player defends an area and shifts when the ball is moved by the offense.

When introducing team handball to beginners, the basics should be taught first and learned well before progressing to more difficult skills. If the game is kept simple and the rules introduced gradually, the students will enjoy the game more.

Passing and Shooting Drills

KAREN A. COLLINS

Karen A. Collins received a B.S. degree in physical education from Southern Connecticut State College, New Haven, in 1975. She is a member of the United States team handball squad which has traveled to Iceland, Denmark, Romania and Canada and a member of the 1975 team for the world championships in the Soviet Union. She is currently teaching physical education and coaching at Windsor Locks High School in Connecticut.

Since the basic skills in team handball incorporate the abilities to throw and catch the ball as well as some dribbling, the following drills have been designed to develop and strengthen these skills. The drills can be used in any level program. At the beginner level, drills are used to teach basic skills, develop and strengthen players with ability, as well as to evaluate individual development. At the intermediate and advanced levels they are used to strengthen and refine skills. Many of these drills have been used by the United States team in skill development and pregame warm-up.

A. Passing Drills

Drill 1. Students form a circle. The ball is passed at random across the circle. To vary this drill, add more than one ball, vary the types of passes used. This drill develops the arm and hand action while strengthening both. It is beneficial in correcting the throwing and catching techniques.

Drill 2. Students form a circle. As the ball is passed across the circle, the thrower follows her pass to where she throws. The receiver catches the ball, passes and follows her pass. This continues at random in the circle. Vary as in drill 1. This develops the students' sense of throwing and catching on the move and increases their concentration on the ball.

Drill 3. Students form two parallel lines, each student facing someone in the line opposite. The ball starts with the first student in one line who passes to the student opposite her. The second now passes to the next girl in the line opposite. The ball continues to be thrown in this zig-zag manner until the end of the line where it begins again. See Figure 1.

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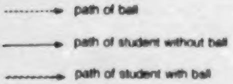

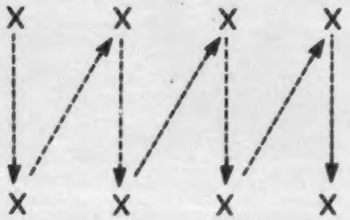

Figure 1.

Drill 4. Students form two lines facing each other in shuttle formation. The lines should be about 10 feet apart. The ball begins at the head of one line, the first student throwing to the first student in the line opposite. The thrower then runs to the end of the opposite line and the receiver passes to the next girl in the line opposite her and runs to the end of that line. See Figure 2. This drill develops a great deal of concentration and eye/hand coordination.

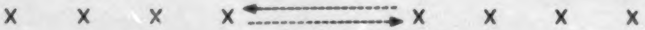

Figure 2.

Drill 5. Students form two lines behind the endline of the court, about 6 to 8 feet apart. The first students in each line begin running down court as they pass the ball between them. When they reach the end of the court they return, running to the outside of the court and passing about 15 to 20 feet apart. When the first two have reached midcourt the first time down, the next two should begin. Drill should be done continuously for a certain length of time depending on the level of the students. This drill develops the students' movement with the ball as well as developing and strengthening lateral passes.

Drill 6. Students pair off and pass between the two. Special emphasis should be placed on throwing quick, accurate passes. Students should attempt to move forward to receive the ball as well as pass on the move. As the passing becomes more accurate, students should begin to move at random around the court with their partner as they continue to throw the ball. This will develop an awareness of the court space and other players around them, as they must be careful not to move into other students' areas.

B. Shooting Drills

Drill 7. Students form two lines about 10 feet apart and facing the goal area. One line is designated the shooting line and the other the passing line. The lines are started about 15 meters from the goal line so that the shooter is taking her shot in the area of the 9-meter line. As the first girl in the shooting line is moving forward, the ball is passed to her by the first girl in the passing line. The shooter continues forward taking a *set shot.* The first two students go to the end of opposite lines and the drill continues in the same manner with the next two students. See Figure 3.

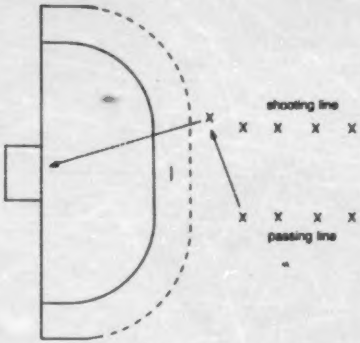

Figure 3. Set shot.

Drill 8. Students line up in the same manner as drill 7, with one line designated shooting and one passing. As the passer throws the ball to the shooter, the passer moves in to set a screen at the 9-meter line. The shooter then moves in to take *jump shot* over the passer. The first two students go to the end of opposite lines and the drill continues in the same manner with the next two students. See Figure 4.

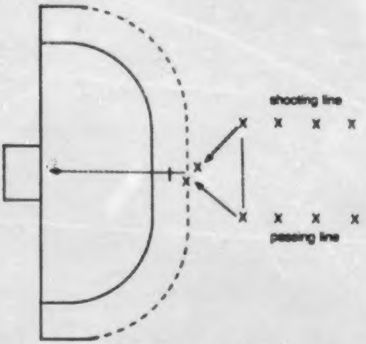

Figure 4. Jump shot.

Drill 9. Students form a line of shooters at the sideline about six to eight feet from the endline. One student stands on the goal circle as a decoy in the position of X-3, (Figure 5). One student is a passer and throws from the area of X-1. The ball is thrown to the first student in the shooting line as she is moving in towards the goal area. The shooter makes her approach inside of X-3 taking a *wing shot* jumping into the circle. See Figure 5.

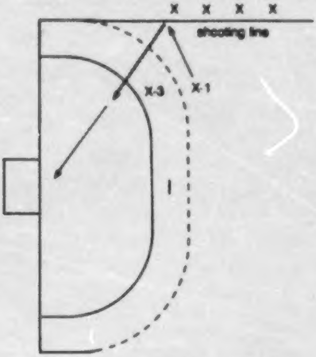

Figure 5. Wing shot.

Drill 10. Two students stand at the top of the circle with their backs to the goal. A third player alternates passing to the circle players. As the circle player receives the ball, she pivots and dives into the circle to take a *circle shot.* Students rotate the positions of circle player and passer. Students should turn both to the left and the right on their shots. See Figure 6.

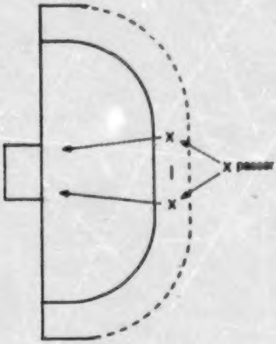

Figure 6. Circle shot.

Implementation of Team Handball in Sports Programs: A Teaching Guide

C. BENNETT WILLIAMSON

C. Bennett Williamson is a member of the faculty of health, leisure and sports at The University of West Florida, Pensacola, where he teaches exercise physiology and biomechanics of sports. He became interested in team handball several years ago and recognized its value for physical education programs. He has introduced team handball to northwest Florida through the sports majors at the university and has conducted workshops for public school physical education teachers.

Team handball is a relatively new sport on the American scene. The sport migrated from the outdoor playing fields of Europe into indoor courts of U.S. military installations, colleges and universities, and, in some areas, into physical education programs in public and private schools.

Team handball, a game of basic movement patterns, has many desirable values and can easily be implemented into physical education programs in schools and colleges at almost any grade level. This new game will add interest and enthusiasm to existing physical education programs and can broaden students' sports skills, understandings and interests, especially since the United States now competes in men's and women's team handball in the Olympics.

What Is Needed To Teach Team Handball?

A practical aspect of team handball is that it requires very little equipment. Regular gym clothes for the players, several team handballs, a set of goals, nets, a playing area and an innovative and enthusiastic teacher can produce an excellent new activity to any physical education program.

1. Team handballs are made of leather and cost is comparable to that of basketballs. For middle school age and below, utility balls approximately the size of team handballs will suffice in a beginning program.
2. A set of team handball goals will be the most expensive item necessary; however, excellent goals can be constructed economically from wooden two-by-fours and lead or plastic pipe. The addition of paint gives a professional finish. Nets can be purchased or economically constructed from used tennis or

volleyball nets or similar net material. In public schools, industrial arts classes and teachers can easily undertake the construction of team handball goals at very low cost when compared to commercial goals.

3. A basketball court, indoors or out, is the playing area. The goals are set on the baselines and existing boundaries are used. The goal-area-line or "circle," the penalty mark and free-throw-line can be painted or temporarily constructed with masking tape.
4. The innovative and enthusiastic teacher can very easily learn the fundamentals of the game. Since the game involves basic movement patterns of running, throwing, jumping, catching, and basic basketball skills of dribbling and defensive guarding, any good physical education teacher can teach team handball.

Basic Fundamentals

Most American students already posssess many of the skills necessary to play team handball because of their heritage of basketball. These basic skills involved in the specifics of handling a different size ball can be developed and incorporated into successful team handball performance.

1. **Running**
   Running is easily taught. The students must learn how to position themselves in relation to the other players on the court.
2. **Passing and Catching**
   These fundamentals are the same as basketball fundamentals, only a different size object is used. The two-handed chest pass, one-handed shoulder pass, side-arm pass, underhand pass, behind-the-back pass and their variations are basic skills used in the game. Catching with two hands is the preferred technique and essential with young players. One-handed catching can be used with mature and skilled players. Numerous simple drills can be used to develop these skills.
3. **Dribbling**
   Again the dribbling of a handball is similar to the dribbling of a basketball; however dribbling should not be emphasized until proper passing and catching skills have been developed. In game situations, passing and catching move the offense rapidly and players should not be preoccupied with dribbling. Some negative transfer might occur in this phase of the game among players oriented to basketball. (Basketball-oriented players will need to become accustomed to the proper utilization of steps that are allowed while holding the ball.)
4. **Shooting or Throwing at the Goal**
   The shots at the goal involve many variations of passing the ball with the addition of many different body movements peculiar to

the situation and individual players. The shot must be a serious attempt to score since an unsuccessful attempt will result in loss of ball possession. Each player will develop her own style of shooting through skill drills provided by the teacher.

Types of Shots

a. *The standing throw* is the most basic of all shots. It is an overhand throw at the goal, preferably a low, hard bouncing shot past the goalkeeper.
b. *The side arm throw* is usually attempted on the dominant throwing arm side. It is used to throw around a defensive player who is guarding the player with the ball.
c. *The low side arm throw* is usually made from a low crotch position in an attempt to throw past the legs and under the outstretched arms of the guarding defensive player.
d. *The opposite side throw or twist shot* is used to throw past the defensive player who is guarding the dominant throwing side of the offensive player. The offensive player fakes to her dominant side, quickly leans to her *non*-dominant side, then lowers her body and throws past the outstretched arms of the defender. This type of throw will be totally new to beginning handball players and should be developed with progressively more body lean as the skill is developed.
e. *The jump shot* is a simply executed shot of two basic variations. One is the jumping high and throwing over defensive players, and the other is jumping into the goal area and throwing the ball before contacting the floor. The player can add momentum by taking a running start (three steps allowed) and propell herself as closely to the goal as possible before making the throw. This is a difficult shot for the goalkeeper to defend against.
f. *The reverse shot* is performed when the player's back is toward the goal. The player should hold the ball in front of her body (concealed from the goalkeeper) and swing the throwing arm from the front to behind her body simultaneously rotating the upper body and hips.
g. *Dive and fall shots* enable the players to get closer to the goal by falling or diving into the goal area. In the execution of the fall shot, one foot remains in contact with the floor and the thrower falls into the goal area and releases the ball before contacting the floor in the goal area. The dive shot is executed by diving toward the goal as closely as possible and releasing the ball before contacting the floor in the goal area. This is an advanced skill and if taught must be accompanied with proper landing techniques.

5. **Goalkeeping**
The goalkeeper has a strenuous and challenging assignment. She depends upon her teammates to prevent offensive throws at the goal, but she is the last line of defense and must be prepared to protect herself as well as prevent the score. A slow ball could be caught but most balls will be fast moving and should be deflected with outstretched arms, legs or body trunk. The basic stance is in front of the goal with laterally outstretched arms and legs. It is advisable for beginners to wear a sweatshirt and pants to prevent the stings of a hard thrown ball and a softball catcher's mask is recommended, especially if the player wears eyeglasses. Obviously, the goalkeeper will have some hard plays to make, especially among high school and college students. The teacher should exercise caution in selection of goalkeepers to avoid possible injury to students lacking in quick reflexes, sharp eyesight and good motor skills.
6. **Defensive Play**
Basketball oriented students will have no problem learning defensive fundamentals in team handball since the techniques are almost the same. There is more body contact allowed in team handball than basketball as the team handball player is permitted to obstruct an opponent with her body. This allows a defensive player to move into the path of an offensive player and is an essential tactic in preventing the scoring of goals. The type of defensive play will be zone, man-to-man, or a combined man and zone defense. A zone defense is practical when teaching beginners and a man-to-man can be effectively used as players gain experience, skills and endurance.

Suggested Teaching Unit

Brief history and description of the game
Passing and catching skills
Dribbling skills
Shooting skills (throwing at goal)
    Overhand
    Side arm
    Low side arm
    Opposite side throw (twist shot)
    Jump shot
    Reverse shot
    Fall shot (advanced)
    Dive shot (advanced)
    Defensive fundamentals
    Goalkeeper
    Rules

Offensive plays and strategy
Defensive play and strategy
Evaluation

Summary

Team handball is an excellent activity for physical education and sports programs. The game involves basic movement patterns and is quickly learned and easily taught by an innovative and enthusiastic teacher. The addition of team handball to a program will add to the students' understandings and appreciation of sports on the international and Olympic level as well as contribute to team play and motor and cardiovascular development. The cost of team handball equipment is relatively inexpensive and can be held to a minimum by local construction of goals and nets.

Team handball is a new sport for old programs! Try it – students will like it.

Refereeing and Related Problems

CHRISTER AHL

Christer Ahl has been refereeing team handball for 12 years. He was an instructor for the Swedish Handball Federation and supervised referees in the National Leagues of Sweden. He is responsible for questions on rules and refereeing with the United States Team Handball Federation.

Rules in most major sports tend to change very slowly and sometimes to lag behind the actual development of the sport. Team handball is not an exception but the rules now seem to have been stabilized and the need for changes is not apparent, even though discussions about which measures should be taken, for example, against offensive fouls and time wasting, have been quite heated in recent years. Of course, it is an eternal question of principle whether the rules should always be changed to catch up with the actual situation or whether the rules are reasonable while players and coaches have gone too far in the direction of violence, rough play and lack of discipline. Anyway, there is now an international agreement that major rules changes can be made only every four years, namely, in connection with the Olympic Games. This is supposed to facilitate the long-range planning and training of teams and players at the international level.

Referee Duties

Both referees have the same authority and responsibility even though, in each situation, they might have different duties. Normally one referee places himself as "court referee" between the half-way line and the attacking team while the other referee acts as a "goal line referee" on the goal line of the defending team. A somewhat diagonal positioning might be preferable. When the previously defending team gains possession, the goal line referee becomes court referee "behind" that team while his colleague becomes goal line referee. Referees are also advised to change ends at regular intervals, for example, every 5 to 10 minutes.

The court referee watches the play on the court and moves to be in a position to follow the ball and related confrontations. This must not mean, of course, that he loses control over possible infringements away from the ball. The court referee is the one who handles most free-throw situations, blows his whistle (when necessary) when throws are to be taken by the attacking team, interrupts time wasting, etc. The goal line referee controls the entering of the goal area, judges when the ball has crossed the goal line and when a goal is scored. As to fouls committed immediately outside the goal area, he might often be in a better position than his colleague to judge possible penalty or free-throw situations, even if these are normally considered part of the court referee's responsibility. Especially in *these situations*, any agreed or assumed division of responsibilities should not lead to undiscovered infringements.

Formalities and prestige should not interfere with the two referees' duties as a team. The referees normally are expected to have such a good contact all the time that contradictory decisions do not arise; if they do occur, however, the rules are that if the referees give different decisions for fouls against the same team, the stronger of the decisions shall be enforced. If, on the other hand, the decisions are going in different directions, the decision of the court referee prevails. All decisions based on facts shall be final. It is only permissible for the captain to appeal against decisions which are clearly against the rules of the game.

It is important for the referee to move in an "economical" pattern so that he can judge as many situations as possible from an acceptable distance and angle. Rushing from goal line to goal line takes too much concentration away from the play, and lazily walking around the half-way line is not recommended. Regular changes between goal line position and court position at both ends give a more complete view of the confrontations between the attacking and defending teams. When in court position the referee should avoid getting stuck in the middle. It is also dangerous to get too close to the play, thus interfering with it. Players might be tempted to take advantage of a referee following too regular a route. Flexibility is the keyword. It should be remembered that it is dangerous to award a goal from a court position without being absolutely sure that the whole ball has crossed the line. From some distance it is very easy to make a premature decision.

Referee Whistles, Signals

Blowing the whistle and signals are the important elements in the referee's communication with players, team officials, timekeepers and spectators. There are no prescribed signals to be used in different situations. Generally, the referee should use a certain differentiation so that players can understand the referee's decision and reaction from how the whistle is blown. For example, a loud, sharp whistle might be appropriate for a penalty throw, while a more muted signal might be used for the taking of a corner throw.

The need for exactness and clarity is much more important for hand signals. The main thing is always to show which kind of throw is being called and which team is being awarded the throw. It might also be necessary to indicate the place from where the throw is to be taken. The referee should always use simple and distinct signals and avoid exaggeration, thus drawing attention away from the referee personally.

Only recently was an internationally recognized set of signals for various infringements established. Many different signals had been used previously with slight modifications from country to country. Many of the old and the recently established signals are very similar to those used in basketball. They are intended not to cover every possible situation, but to be natural, logical explanations of many game interruptions. These explanatory signals should be given *after* the direction of the throw has been indicated but *before* the place is pointed out.

Signals are as follows:

Rotating the hand. Too many steps or holding ball too long.

Moving hands up and down alternately. Illegal bouncing or catching.

Fictitiously embracing something. Holding.

Stroke on arm Striking.

Moving elbow at shoulder height. Pushing and running into player.

Raising one arm with clenched fist, while pointing with other arm to player in question and saying "caution." Caution.

Same as caution signal except two or five fingers are used instead of fist. Suspension for two or five minutes.

Lifting both arms and crossing above head. Exclusion or disqualification.

Goal line referee pointing down toward goal area. Goal throw.

Goal line referee pointing toward corner from where throw is to be taken. Cornerthrow.

Goal line referee pointing both arms in playing direction of team awarded throw-in. Throw-in.

Swinging movement of arm toward goal area line. Entering goal area.

Goal line referee blowing whistle and pointing toward half-way-line after having seen court referee indicate no objections by raising arm. Scoring of goal.

Pushing movement with both arms toward defending team. When defending team players do not keep 3-meter distance when opponents are about to take any throws where this distance is required.

Raised arm – same as time-out sign for other sports. Message to timekeeper to stop time.

Raising of both arms with one hand on wristwatch. Time wasting.

Problems of Referee

It is obvious that refereeing a team handball game can be quite a challenge regardless of the standard of the game. Many different problems might be encountered, some of them typical for refereeing in general, others more specifically related to team handball. A few frequently discussed subjects will be mentioned here.

Perhaps more than in many other sports, it is necessary for a referee in team handball to develop the right feeling and understanding for the game. The referee should be aware of aspects of the game other than rules interpretation. It might not be necessary to be or have been a player on a high level to become a good referee, but watching games and practice sessions, penetrating tactical patterns and understanding the main features of them are indispensable parts of the job. The connection between theory and practice must never be forgotten.

One important aspect of the referee's duty during a game is to maintain a firm control to make sure that the players' safety is given high priority and the risk of injuries is minimal. The referee, then, must have a good grasp of the normal action of the game as it appears on the court, not just in the rules. The referee must be able to "read the temperature" of the game and act accordingly. He should know when and where to watch and should know which incidents are indications of unacceptable violence and carelessness and which are unavoidable results of the players' general excitement. Fast, strong and technically advanced players should be protected against the less skilled players' illegal efforts to balance the situation.

Body contact has increasingly become a part of the game. One specific area that implies a lot of problems for the referees is the goal area, where no court players are allowed. This means, of course, that the attacking team normally has to "battle against a wall" of defending players immediately outside the goal area line. The defending team will certainly not stand idly by watching the attacking players' efforts to create openings and to back up teammates into positions for taking shots. Quite often, almost all of the 12 court players crowd into a very limited area. It is understandable that two referees might find it difficult to see what is actually happening in the crowd, even though they are constantly moving into the very best position. It is not only a matter of drawing the right conclusions of what they actually see but also a question of understanding what is happening "around the corner," judging from the movements of players and ball. Nothing beats experience, but a good understanding of the game certainly helps a lot.

Another area that demands excellent judgment by the referees is the explicit wording in the rules concerning giving the advantage to the attack. The rules state that the referee is to let the attacking player continue when he is assured that the player and team benefit more from retaining control of the ball than from being awarded a free throw or even a penalty throw. Once the player has been allowed to continue, the referee may not change his mind and if the player fails, perhaps because his position was worse than the referee thought, no throw can be awarded. A consistent and successful interpretation of this rule is the trademark of a first-class referee. The referee who has an unfortunate game in this respect is always bound to receive some criticism, although, of course, the situation is to some extent a matter of luck.

Both in the situations at the goal area line that were refereed to earlier and also in general, the question of blocking versus charging is an eternal one. Blocking with the body is always allowed against any opponent, but when there is a frontal collision between two players, the referees must be in a very good position to judge whether the defending player was actually standing still without using his arms or if he was charging forward against the opponent. Also in more static situations at the goal area line there might be some problems. The defending player who is seemingly holding or pushing the opponent in front of him might very well be trying desperately to retain his balance as the attacking player is leaning heavily against him. One of the biggest problems in handball refereeing today is the widespread tendency to be much too generous to the attacking players in all kinds of blocking and charging situations.

Another specific problem is time wasting, which is definitely not allowed in team handball. No definition of time wasting could be foolproof as there is no time limit involved, but a team which is trying to stay in possession, running and passing the ball without any attempt to take a shot or to break through the defense, should be penalized with a free throw. It might sometimes be difficult to notice the time wasting but what causes more problems is the inconsistency and the fear of enforcing the rule too strictly. However, if there is any tendency, it is probably to be too generous.

Another type of situation which needs close attention from the referees is the attacking team's taking free throws at the opponent's free throw line. They are supposed to stay outside the free throw line and the defenders are supposed to stay at the goal area line until the throw is taken. To determine who is at fault when the two teams are colliding somewhere halfway, as the attacking team is blocking for a shot to be taken, is admittedly difficult, but here also it is quite normal to favor the attacking team. They will often get a free throw very early if they get struck, but an alert referee will discover that the defenders are quite frequently committing both the first and the most serious infringements.

When an attacking player just manages to find an opening in the defense, often perhaps from a very narrow angle, it is natural for the nearest defender to try to block the shot or to play the ball out of the opponent's hand. It should then be emphasized that it is strictly prohibited for the defender to move his arms to strike, seize or even touch the shooting player's arm, but the defender is not committing a foul if he manages to hold his arms absolutely still in the way of the opponent's arm so that perhaps the ball falls down.

Playing the ball out of an attacking player's hand is a finesse that very few players master perfectly. Players may not touch an opponent's arm or hand, but the situation often passes very quickly and occurs where the referee is at a disadvantage. It is sometimes impossible to see whether the ball and/or arm is touched. A good clue is whether the ball is deflected away or "drops dead." In the latter case, most likely the arm was hit.

To mention that traveling calls might be both important and difficult, thus causing controversy, is an understatement in team handball and in other sports, but no attempt to give any detailed advice will be made here. Once again, emphasis is on practical understanding rather than complete reliance on the wording of the rules.

Psychological Aspects

Some notes on the psychological aspects of team handball refereeing should also be made. Enough has presumably been said about the importance of getting involved in the game and developing the right feeling for it. Therefore, only a word of warning might be added. Involvement should not be in contradiction to maintaining self-control during critical parts of the game when the atmosphere is excited and confused. A high level of concentration and the ability to cope with stress are important factors.

The referee must be self-confident enough to believe in what he is doing so that there is no hesitation when it comes to taking correct measures. He must be able to communicate with everyone involved and to convey necessary facts and explanations. A certain distance to the players must be kept but a human approach is necessary and the referee must never become a "king" on the court.

The referee must be aware that his role is rather special in many respects. He must appreciate the expectations of his performance without overreacting to them. Pressure from a loud and biased crowd and constant risk of criticism are facts that a referee will have to live with. They should not be ignored but rather be seen as a part of the challenge that makes the job so interesting.

It is important for the referee more than anyone else involved in a handball game to accept that they will inevitably make mistakes. In such situations the referee must avoid getting upset. The players might react against the call and then it is, of course, bad enough to have made one mistake without perhaps making another one – being out of control and reacting abnormally to criticism. There is never any excuse for misconduct on the part of a player but, on the other hand, there is no reason why a player protesting a bad call should be worse off than a player criticizing a perfect call. Furthermore, for a referee to keep worrying about a call, while the game is continuing, might easily lead to additional mistakes, as the referee is not concentrating on the upcoming situations. So the advice is obvious: forget about the mistakes – at least until the game is over. Then one might analyze the situation and perhaps learn something for the future.

Referee Recruitment

Who can become a referee? It would be easy to answer that anyone interested with reasonably good physical fitness should be able to contribute, but the explicit and implicit requirements from the above analysis and the duties of a referee should, of course, be kept in mind. Insisting on candidates having all the desirable personal characteristics would make the basis for recruitment impossibly narrow. First of all, the game is played on different levels and second, real interest in the game and strong motivation could easily be assets balancing other limitations.

Refereeing is an excellent way of staying in close contact with the game and combining physical exercise with some psychological challenges. The satisfaction of making an important and valuable contribution to the game should also be rewarding. Just as in many other sports, attempts are always made to recruit referees from among ex-players. They can be expected to have the necessary understanding for the game. At lower levels, many referees are recruited among team officials, coaches, managers and assistants. This has the same advantages, but it might increase the burden too much for persons already involved in the game. On the other hand, it is rather unusual to see players, who are still active, taking up refereeing. This is too bad, as it would not only bring a number of new, good referees into the game, but also such an experience would be clearly beneficial for them as players.

UNITED STATES TEAM HANDBALL FEDERATION
10 Nottingham Road **Short Hills, N.J. 07078**
Tel. 201-379-4148

Member: International Handball Federation United States Olympic Committee

Application for Certification by USTHF
as
Team Handball Referee/Instructor

The undersigned does hereby apply for certification by the USTHF as a Team Handball Referee/Instructor.

name club or organization

street city state zip code

phone, business & home birth date sex citizenship

level desired USTHF member since

List refereeing experience in all sports to support your application (be specific – sport, years, clinics attended, etc.).

signature

Application requires endorsement by at least (2) higher level USTHF referees. Please complete form above and forward to persons endorsing you. They in turn will forward application to USTHF.

Recommendations and Comments by Endorsers.

address signature level

address signature level

Note: If your mailing address is different from address given above, please list on back.

Required Qualifications for Certification as USTHF REFEREE

Level C – Applicant must have thorough knowledge of the rules and a reasonable amount of officiating experience. Application must be endorsed by at least two higher level referees.

Level B – Applicant must have officiated a minimum of (50) games.

Level A – Applicant must have officiated a minimum of (100) games and must have successfully completed a USTHF refereering clinic or passed special examination by the USTHF Referee Committee.

Level AA – Referees approved by the USTHF Referee Committee for officiating in international competition.

Required Qualifications for Certification as USTHF INSTRUCTOR

Level C – Applicant must have successfully completed a recognized team handball clinic or a special USTHF examination and demonstrated ability to teach team handball on an elementary level.

Level B – Applicant must have successfully completed a recognized team handball clinic or a special USTHF examination and demonstrated ability to teach team handball on an intermediate level.

Level A – Applicant must have successfully completed a recognized team handball clinic or a special USTHF examination and demonstrated ability to teach team handball on an advanced level.

Level AA – By appointment by the USTHF Technical Commission.

Referees and instructors have to be sustaining members of the USTHF, annual dues $5.00

With their certifications, referees and instructors obtain a USTHF emblem at a charge of $1.50 plus a referee or instructor patch at no charge. Additional emblems can be obtained at a cost of $1.50 plus .50¢ each for the instructor or referee patches.

Goalkeeper Training

JERRILYN JULIAN

Jerrilyn Julian received her B.S. degree from the University of New Hampshire, Durham, and her M.S. degree from Adelphi University, Garden City, New York. She was a member of the US national women's handball team in 1973-75.

The goalie in team handball must have agility, quickness, good eye-hand and foot coordination and courage. She must be able to move quickly from side to side and to anticipate when a shot is coming and where it is going. The following drills are designed to teach the goalie the proper positioning and coordination necessary for the various types of shots.

Angles

The goalie must know what area of the goal is exposed in relation to the type of shot and the position. This can be demonstrated by taking a 60 foot string and attaching the ends to the base of the goal posts. Holding the center of the string, stand near the goal line and gradually move along the six-meter line, noting how the angle changes. By staying in the center of the angle, the goalie can cover the goal (Figure 1).

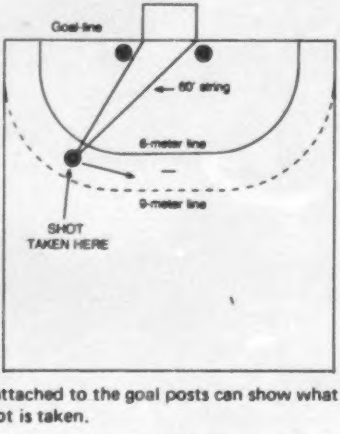

Figure 1. A string attached to the goal posts can show what area of the goal is exposed when a shot is taken.

The most difficult angle from which a player can score is the wing position. From here, the player is limited in the available area of the goal.

From a position directly in front of the goal, a player can shoot at any corner of the goal. The goalie must wait until the ball is released before moving to block the shot. If the goalie moves too soon, the player will shoot to the corner she is moving away from.

By moving out from the goal but at the same time, staying in the center of the angle shown in Figure 1, the goalie can decrease the area at which a player may score. However, since she is moving closer to the shooter, she must be able to react quicker as she has less time to block the shot.

Positioning for the different kinds of shots

Set Shots

The goalie should position herself in the center of the angle of the shot. Arms should be bent and hands held at about shoulder height. The weight should be equally blanced on both feet. The knees should be slightly bent with the weight on the balls of the feet.

Wing Shot

The goalie stands close to the goal post with the hand closest to the goal held above her head. This position reduces the high shot. The other hand, with the arm bent, is held halfway between shoulder and waist height. This will block all shots to the outside corner from the waist up. The leg and foot on that side will block the outside low shot.

Circle Shots

This is a difficult shot for a goalie to stop. The goalie must anticipate the shot. As the circle player receives the pass and turns to shoot, the goalie must step out toward the player. She must establish her position by the time the circle player has turned. By coming out at the shot, the goalie has cut down the angle of the shot and may force the circle player to get off a poorly placed shot.

Penalty Shots

The goalie must come out to reduce the angle of the shot. She may also stand off center giving the shooter a larger part of the goal to shoot at. She does this to encourage the shooter to throw to this side. The goalie must be ready to move quickly to get the shot to that side. Shooters will often try to get the goalie to move and then throw to the opposite side.

Hints For Goalies

1. Block the shot, don't try to catch it.
2. Block the shot using your forearm – your hand can bend back and the shot will go in.
3. Don't try to swing or bat at the ball.
4. Keep your weight on the balls of the feet and stand up. A crouching position gives the shooters a bigger target.
5. Be aggressive, go after the ball.

Drills and Exercises

General Warmup Exercises

1. Jogging
2. Double-time jumping jacks
3. Stretching – most of the warmup should be in stretching the arms and legs.

Ball-handling Drills for One Player

1. Stand arm's length from a wall. Using the fingertips of both hands, rapidly tap the ball against the wall.
2. Stand four feet from a wall. Using the inside of both feet, dribble the ball against the wall. It is important to keep the weight on the balls of the feet in order to move quickly.
3. Stand facing the wall. Throw the ball at an angle against the wall so that you must stretch to the side to block the rebound.

Ball-handling Drills for Two Players

1. Player A stands in the goal, player B stands about five feet away facing A. Quickly pass the ball back and forth. Gradually, B passes to the sides of the goal, forcing A to move to the sides to get the pass.
2. Player A stands in the goal, player B stands about ten feet away facing A. Player A has the ball. She passes the ball to player B and touches a low corner of the goal. As she touches the corner, player B tosses the ball to the opposing high corner. Player A must try to block the high shot. Progress from an easy toss to a quicker one. Repeat four times.
3. Repeat drill 2, touching opposite low corner.
4. Repeat drill 2, touching high corner, blocking shot in opposite low corner.
5. Repeat drill 2, touching opposite high corner.

6. Player A squats in center of goal. Player B tosses the ball to a high corner. Player A must spring toward the high corner and block the shot. Repeat three times in each high corner.
7. Player A squats in the center of the goal. Player B rolls the ball to a low corner. Player A must stretch her leg out to block the shot. Repeat three times on each side.
8. Player A stands in the center of the goal. Player B stands about 10 feet away with two balls. Player B tosses the ball to the high corner, player A catches the ball and tosses it back to B. As A tosses it back, player B tosses the second ball to the opposite low corner. Player A must catch the second ball and pass it back to B. The two players set up a rhythm of catch and toss, alternating opposing high and low corners.
9. Repeat drill 8 using opposite high corner.
10. Player A stands in the center of the goal with her back to the court. Player B stands 10 feet away facing the goal. Player B whistles; as she does so, she tosses the ball to a corner of the goal. Player A upon hearing the whistle, quickly turns and tries to block the shot.

Backcourt Shooting

CARMEN FOREST

Carmen Forest is a senior at the University of Missouri at St. Louis, majoring in physical education. She participates in five varsity sports, and is a member of the United States national team handball team for 1975-76.

Scoring from the backcourt is one of the most exciting parts of team handball. It requies powerful and accurate shooting 9-13 meters out from the goal. There are two ways to score from the backcourt – the jump shot and the set shot. Each shot has to be perfected by a backcourt player in order to be effective against an opponent. These shots should be taken from the nine-meter circle or farther out in order for the shooter to be far enough away from the defense so that the shot cannot be easily blocked or deflected. The defense will not usually come out past the nine-meter circle to guard a shooter.

Jump Shot

The jump shot is generally executed with a lead-in pass from another player. As the shooter catches the ball approximately 12 meters from the goal, the jump is taken in two steps so that the shooter can get up over the defense before the defense can react. While in the air, the shooter has to bring the ball back, rotating the shoulders and trunk and then snapping the body forward to put power on the shot.

The jump shot is taken over the defense. The shooter needs a good vertical jump off the left foot, (for a right-handed shot) not a broad jump, in order for the shot to be effective. The jump should be taken from 9-10 meters out so the shooter can get the full height in the jump. Also, the shooter has a chance to hang in the air and look at the goalie, waiting for a commitment so that the ball can be placed in an open corner.

The jump shot is vital in that it forces the defense to be drawn in toward the middle, leaving the possibility of open wing shots. The jump shot also forces the defense to come out to the shooter, thereby leaving a hole on the six-meter circle so the shooter can pass the ball to a circle runner who has moved into the hole for a shot.

Set Shot

The set shot is started with the same lead-in pass toward the goal. As the shooter catches the ball approximately 12-15 meters from the goal, momentum and rhythm are built up while the three steps are taken (left-right-left.) As the left foot is planted (for a right-handed shot) near the nine-meter circle, the shooter leans into the shot, transferring the weight forward so that the follow-through is balanced over the left foot.

The set shot must be taken through a hole in the defense since the shooter cannot get the ball over the defense. The ball can be shot at the head and shoulder level of the defenders toward the high corners of the goal or at the knee or foot level of the defenders toward the low corners. As the ball is being passed from one offensive player to another, the shooter should always be looking for a hole to shoot through. Once the hole is seen, it will only be there for a split second. This is when the ball needs to be shot.

Penalty Shot

Because the backcourt player must have a strong set shot, she is usually selected by the coach to shoot the penalty shots. The player fouled does not have to shoot her own penalty shot as she does in basketball. The penalty shot is described in the rules as a one-on-one shot against the goalie. All other players must be outside the nine-meter circle. The rules state that the player executing the penalty shot cannot touch or cross the penalty throw line (seven-meter line) until the ball has left the hand. This requires a slight adjustment in the set shot.

The best technique for the shot is to have the weight on the front foot (left for right-handers, right for left-handers) which is placed behind the seven-meter line. After the referee has blown the whistle, the shooter has three seconds to shoot the ball. The weight should

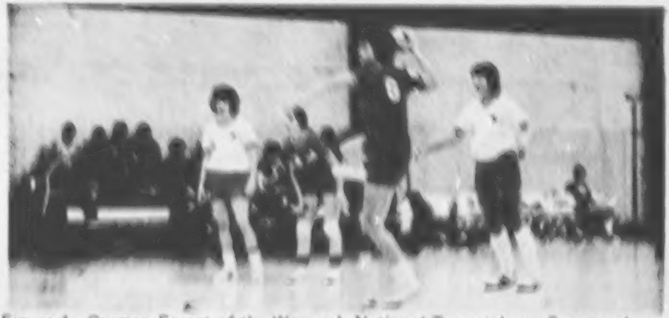

Figure 1. Carmen Forest of the Women's National Team takes a 7-meter shot.

be shifted back slightly to get momentum, but the front foot should not be moved as there is a chance that the foot could cross the line. The shooter should watch the goalie for a commitment as to where to place the ball and then lean into the shot, transferring the weight forward for the required power. If necessary, the shooter could fall forward across the line, after releasing the ball, so that extra power and direction is added to the shot.

In backcourt shooting, it is important that the players are always in motion. This will force the defense into the mistakes and create holes for the shots to be taken through. Also, patience is required for the right time. Eventually the defense will tire, making it easier for the backcourt player to score.

Wing Play

KAREN GERARD

Karen Gerard is physical education instructor and coach at Dexfield Community School, Redfield, Iowa, and a member of the United States national team handball team in 1975-76. She received a B.S. degree in education from Iowa State University in 1975.

In team handball the wings are a very integral part of the team. Both on offense and defense, the wings hold down the end positions. Because of their position, their play is unique and training for wing play is specific.

On offense, the basic position of the wing player is where the nine-meter line meets the out-of-bounds line. The wings face their backcourt players because the passes into the wing will come from the backcourt. As determined by the specific play, the wings may be stationary or rotating with the circle runner and the other wing.

On offense there are several things a wing may do. The first option of the wing is to make an individual move to beat the defender and jump into the circle to shoot on the goal. If the first option is not possible the wing may receive a pass while stationary and return the ball quickly to the backcourt players hoping to move the ball fast enough to get a defender out of position. The wing may also move across the court toward the other wing position creating movement in the offense and initiating the start of a play. The term *sweeping* refers to the movement of the wing across the court to the other side.

Specifically, in a 3-3 offense, the wing, upon returning the pass out of the wing to the backcourt, will sweep upon one spot exchanging positions with the circle runner who then moves over to the wing position (Figure 1). This movement can sometimes create holes in the defense, or become a diversion for activity in the backcourt as they move in for a shot.

In a 2-4 offense, the wing returns the pass to the backcourt. If she is to sweep, she comes out of the wing position to set a screen on the defender of the opposite wing. At the same time, the circle runner sets a screen on the second defender over from the wing. This creates a double screen and a hole for the other wing to go through upon receiving the ball from the backcourt (Figure 2).

The angle of the shot from the wing is not as great as that of a shot from the middle. Consequently, the wing must do several things to compensate for this. First of all, when a wing gets past her defender she must not only leap or dive in toward the goal, but at the same time jump toward the middle of the court to get a better

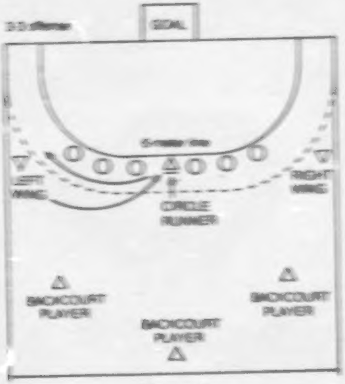
3-3 offense
GOAL
6-meter line
LEFT WING
CIRCLE RUNNER
RIGHT WING
BACKCOURT PLAYER
BACKCOURT PLAYER
BACKCOURT PLAYER

Figure 1.

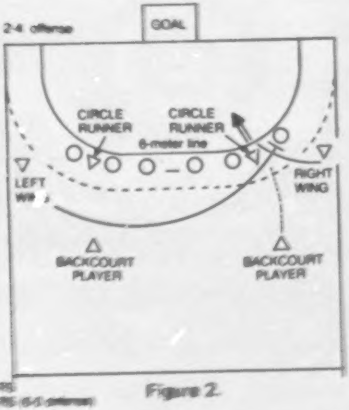
2-4 offense
GOAL
CIRCLE RUNNER
CIRCLE RUNNER
6-meter line
LEFT WING
RIGHT WING
BACKCOURT PLAYER
BACKCOURT PLAYER
△ OFFENSIVE PLAYERS
○ DEFENSIVE PLAYERS (6-0 defense)

Figure 2.

angle at the goal. While hanging in the air, the wing must keep her head and chest area up and wait for the goalie to commit herself. Usually the area open will be either the high opposite corner of the goal or low between the goalie's legs as she extends to try to block the low shot.

Ideally, the right wing should be a left-hander. Using the left-handed shot from the right side will allow a better angle at the goal. If you do not use a left-hander on this wing, the right-handed girl should make several adjustments to get a better angle to the goal. When the wing dives in to shoot, the body should be rolled slightly and the right arm should come right past the right ear with the arm sweeping in an arc around the head towards the goal. Using this round-the-head technique, the wing can get her right arm out farther to get a better angle to the goal.

If a wing gets by her defender and decides the angle is not good enough and that the goalie would probably block the shot, the wing should pass across to the other offensive wing, into her circle runner, or out to her backcourt player. These options are better than forcing a bad shot.

Offensively, there is one more duty for wings. The wings usually initiate the fast break. When on defense, if a shot is taken from the opposite side, the wing should anticipate the pass coming from the goalie after a blocked shot and be sprinting down the floor looking for the pass and the fast break.

On defense, the wing must do several things to keep from being scored upon. First of all, the wing should always stay on the six-meter line. Coming off the line on defense leaves the wing too vulnerable to be beaten one-on-one by the defense. When the ball goes over to the wing position, the whole defense shifts over leaving no holes. The wing stays over just far enough so that the offensive wing has no angle for a shot. Should a wing get beaten on defense, she should dive back into the circle with both arms outstretched towards the offensive player, hoping to distract her and lessen her chances for a open shot at the goal. The defender can also try to knock the ball out of the shooter's hand. The defender must be careful not to push or contact the wing as this would result in a seven-meter penalty shot for the offense.

In conclusion, the wings must develop basic skills for offense and defense to strengthen the team play. Individual practice incorporated with team practice should enable the wings to be a threat on offense and to be strong defensively.

Three Phases of the Fast Break

REITA CLANTON

Reita Clanton received her B.S. degree in physical education from Auburn University, Auburn, Alabama, where she now coaches the women's intercollegiate softball team. In 1974-75 she taught and coached girls basketball at Glenwood School in Phoenix City, Alabama. She is now a member of the team handball national team.

The fast break in handball, as in basketball, can be a valuable extra dimension to an offensive attack. The fast break is an advanced offensive technique which requires excellent ball handling, the ability to execute skills while moving at high speed and great stamina.

The fast break is the strategy by which the offensive team beats the defense down the floor for a quick goal. The execution develops in three phases or options. Explanation of the fast break will be given as seen from the basic 6-0 defensive set up.

First Phase

The first phase of the fast break is simply a long lead pass from the goalie to either wing breaking down court. From the 6-0 defense, as a shot is taken on goal and missed or blocked by the goalie both wing defenders break down court. If the shot is taken from the wing on offense, the wing defender on the opposite side of the court from which the shot is taken breaks down court. The wings sprint to the center line, then look back for the ball which is passed from the goalie. The goalie passes to the open wing player. The ball is received by the wing on the run similar to a wide receiver in football. The wing player receiving the pass takes the ball on to the goal. This

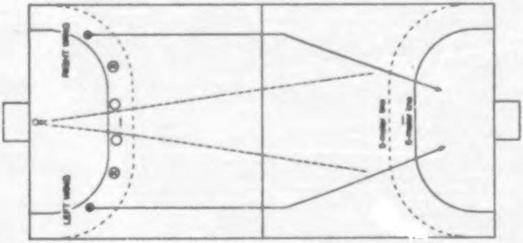

Figure 1.

phase of the fast break usually ends up in a one on one situation, offensive player versus the goalie (Figure 1).

Second Phase

The second phase of the fast break involves the option of the outlet pass. This phase begins as a shot is taken on goal and missed or blocked by the goalie. Again, as in phase one, both wing defenders break down court as the shot is taken. If for some reason the goalie cannot get off the long lead pass to the wing, which is always the first option, she looks for the outlet pass. The outlet is the inside defender next to the wing. From her defensive position, the outlet breaks to an open point on the court between the nine-meter line and center line then turns and looks for a direct pass from the goalie.

From this point, the break should result in a 3 on 1 or 3 on 2 offensive advantage. When the outlet receives the pass, she immediately looks down court for the open wing. If the wings are covered, the outlet centers the court and heads down the floor on the dribble.

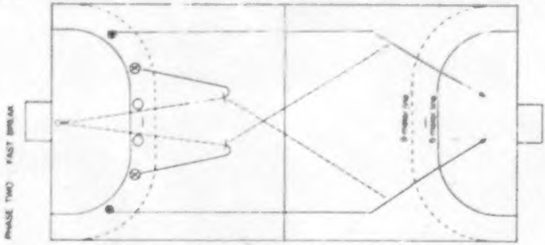

Figure 2. Outlet pass can go to either side.

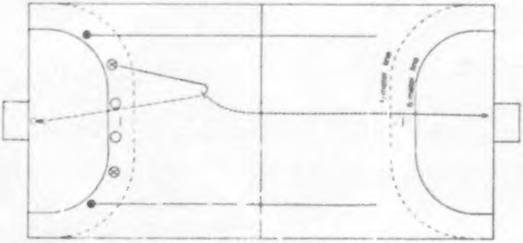

Figure 3. If wings are covered, outlet person centers the floor and brings ball down the court until challenged or she may be left open for a shot from 9-6 meters.

If the outlet person reaches the nine-meter line unchallenged, she should take the shot. If one of the defenders commits herself to the outlet person, the outlet should pass off to the open wing for the shot. This phase is similar to the three-lane basketball fast break (Figures 2 and 3).

Third Phase

The third phase of the fast break develops the same as the second phase except it involves a trailer. Either circle runner defender serves as the trailer. The circle runner defenders are the two middle positions next to the inside defenders. The first responsibility of the circle runner on defense is to block out in case of a rebound from a blocked shot. However, when the goalie has secured the ball and makes the outlet pass, the circle runner defender moves down the court to trail the play. The trailer serves mainly as a safety valve and can be very effective. For example, if the outlet person passes down court to the wing and the wing is cut off, the wing can pass back to the trailer coming down the middle of the court where she may have a clear shot from nine meters. If the trailer does not have a good shot, she holds up and sets the offense (Figure 4).

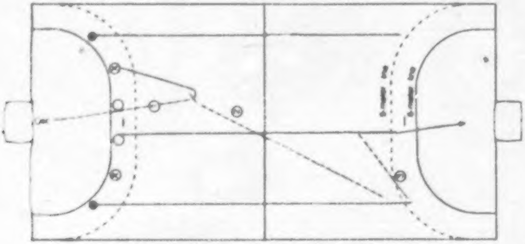

Figure 4.

① FIRST PASS FROM GOALIE
② SECOND PASS FROM OUTLET
③ THIRD PASS FROM WING TO TRAILER

KEY TO FIGURES

웃 — goalie
● — wing defender
○ — inside defender
○ — circle runner defender

------ — pass
〰〰 — dribble
——• — shot

The 4-2 Defense in Team Handball

MICHAEL D. CAVANAUGH

Michael Cavanaugh received his B.S. degree in kinesiology from UCLA in 1974 and M.A. degree in kinesiology in 1976. He is an "A" level instructor in the US Team Handball Federation, member of All-Army squad in team handball, 1971, member of US national team 1973-75, and player-coach for the UCLA team, 1972-76.

Some people might believe that team handball is in the infant stages of development in the United States. While this is true in some respects, if we use the quality of performance of our men's and women's national team in international competition as criteria of development, then the assessment could not be considered adequate. The consistent trend is for the United States to show well offensively by scoring a respectable number of goals against strong international competition. The weakness seems to lie at the other end of the court defense.

There is no question about the value of a competent goalie to a team's defense. A good goalie can make up for mistakes made by his defending court players. Even though the knowledge of having a good goalie should add confidence to the defensive effort, it should never result in an over confident letdown. Each defender must realize that he is part of a group effort. To defend his goal, and to do so properly will require verbal communication with his teammates. A good defense is seen to shift as a unit with the movement of the ball. Another good defensive trait lies in the ability to anticipate passes, blocks and picks, and shots. These basic defensive principles can be incorporated into a number of defensive formations. It is worth mentioning that there is not one defensive formation that can fit against all offensive systems. A change in any formation will strengthen the defense in one aspect, while weakening it in another. The 4-2 is one defensive formation that offers many strengths, while presenting weaknesses that can be overcome.

In the 4-2, there are four players who remain close and along the 6-meter line. The remaining two players, often called attackers or chasers, are in an area between 7 and 10 meters from the goal (Figure 1). The chasers advance as far as 10 meters only on the occastion to check an exceptionally strong outside shooter. The inside four players remain near the 6-meter line shifting as a unit in their defense of the line. There are some advantages to this defense which are immediately apparent. In this formation the defense is essentially in two waves, and this provides good depth against penetration. The 4-2 is also a strong defense to use against a team in possession of good outside shooting. The chasers are in a position to harass the passing game of the offense and this in turn leads to an increase in interceptions and fast break possibilities.

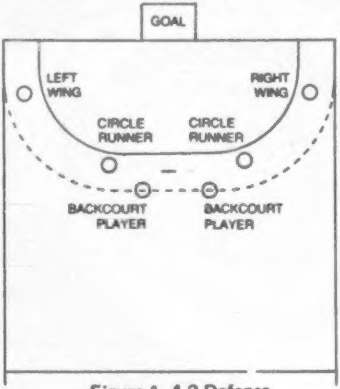

Figure 1. 4-2 Defense.

Weaknesses of 4-2

As mentioned, there are weaknesses with each defensive formation. In the 4-2, where there are two less players situated directly near the 6-meter line, there is increased vulnerability to wing and inside attack. The chasers especially become vulnerable to blocking plays. The United States particularly makes good use of the basketball pick and roll play against chasers used against them. In addition, the 4-2 defense is extremely demanding physically, and as might be expected requires a tremendous amount of team coordination. If defensive team coordination becomes strong in the 4-2, the remaining mentioned weaknesses become less apparent. For example, if picks and blocks are anticipated and verbally called out, the defense can easily adopt a switching pattern. Again, by verbally communicating, anticipating and shifting as a team, weakness is overcome. The same can be said to offset any wing play advantage the offense has against the 4-2.

Achieving 4-2 Defense

To achieve the team coordination that is so essential to execute the 4-2 defense properly it becomes necessary for the defense to play and practice the formation until their reaction to the situation and its contingencies becomes nearly reflexive with the defensive team members. It is achieved then through hard work, long hours and play experience. While it is virtually impossible to adjust and react defensively to all situations, and that, in essence is the nature of the game, the team which adjusts the quickest to offensive threats will probably have fewer goals scored against it. It is my contention that the 4-2 has the greatest strengths and flexibility of all the defensive formations. It is a complicated defense to learn and play, but one which stresses the *team* aspect in team handball.

Team Handball Bibliography and Audiovisual Aids

BECKY GOERING
Kansas State University
Manhattan, Kansas

Books and Pamphlets

Available from U.S. Team Handball Supply Company, 400 Hillside Avenue, NJ 07205.

Buehning, P.G. *Goalie Training.*

Buehning, P.G. *Team Handball Training.* $4.50.

International Handball Federation. Illustrated pamphlet giving a general introduction to team handball. 50¢.

Park and Fahey. *Team Handball, An Introductory Manual.* $3.50.

Rowland, B.J. *Handball.* $5.

Available from Team Handball, 909-170 Hargrave Street, Holiday Tower, Winnipeg, Manitoba $3C 3H4.

Blazic, B. *Team Handball.* $4.89

Blazic, B. *Team Handball: A Bo*[illegible]*n-a-Page.* $2.50.

Articles

Peterson, Robert. Team handball: Fast, furious, and fun. *Boys Life,* pp. 28-29, Jan. 1976.

Films (16mm)

Prices listed are subject to change. Numbers in parentheses refer to the film distributor which appears at the end of the film list.

Introduction to Team Handball. 16mm, 25 min., optical sound print, color. Rental for USTHF members $15, nonmembers $20. (1). A general introduction to team handball, its elements, defensive techniques, shooting, offensive and defensive systems.

Introduction to Team Handball. 16mm, 20 min., optical sound print, color. Rental for USTHF members $15. nonmembers $20. Shooting techniques, offensive plays, and free throw plays.

1970 World Championship Final for Men in France. 16mm, 20 min., French optical sound print, color. Rental for USTHF members $10, nonmembers $15. (1). Roumania vs. East Germany. An excellent movie introducing team handball at its best.

Officiating Movie. 16mm, 30 min., German sound, color. Rental for USTHF members $20, nonmembers $30. Produced by the

International Handball Federation. An excellent movie illustrating the interpretation of the rules by means of actual game situations.

Team Handball Techniques and Plays. 16mm, 25 min., silent, b&w. Rental for USTHF members $10, nonmembers $15. (1). Individual sequences of various shots used in handball, passes, ball handling, goalie training, and many plays against various defensive formation. An excellent movie for team training.

Film Distributor

(1)United States Team Handball Federation, 10 Nottingham Road, Short Hills, NJ 07078.

Organizations

United States Team Handball Federation
See address above.
Telephone (201) 379-4148

International Handball Federation
Basel/Switzerland
Gundeldingerrain 10

Equipment

U.S. Team Handball Supply Co.
400 Hillside Ave.
Hillside, NJ 07205
Telephone (201) 926-6004

Tachikara Team Handballs –
National Distributor
Arch Billmire Co.
2650 Third St.
San Francisco, CA
Telephone (415) 285-8770

NAGWS RACQUETBALL GUIDE COMMITTEE*
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*The 1976-78 *Guide* was developed by the 1975-76 Guide Committee. The 1978-80 *Guide* will be developed by the 1976-78 Committee.

OFFICIAL RULES OF RACQUETBALL*

FOUR-WALL

PART I. THE GAME

Rule 1.1–Types of Games. Racquetball may be played by two or four players. When played by two it is called "singles," and when played by four, "doubles."

Rule 1.2–Description. Racquetball, as the name implies, is a competitive game in which a racquet is used to serve and return the ball.

Rule 1.3–Objective. The objective is to win each rally by serving or returning the ball so the opponent is unable to keep the ball in play. A rally is over when a side makes an error, or is unable to return the ball before it touches the floor twice.

Rule 1.4–Points and Outs. Points are scored only by the serving side when it serves an ace or wins a rally. When the serving side loses a rally, it loses the serve. Losing the serve is called an "out" in singles, and a "handout" in doubles.

Rule 1.5–Game. A game is won by the side first scoring 21 points.

Rule 1.6–Match. A match is won by the side first winning two games.

PART II. COURTS AND EQUIPMENT

Rule 2.1–Courts. The specifications for the standard four-wall racquetball court are:

(a) Dimension. The dimensions shall be 20 feet wide, 20 feet high, and 40 feet long, with back wall at least 12 feet high.

(b) Lines and Zones. Racquetball courts shall be divided and marked on the floors with 1½ inch wide red or white lines as follows:

(1) Short Line. The short line is midway between and is parallel with the front and back walls dividing the court into equal front and back courts.

(2) Service Line. The service line is parallel with and located 5 feet in front of the short line.

(3) Service Zone. The service zone is the space between the outer edges of the short and service lines.

(4) Service Boxes. A service box is located at each end of the service zone by lines 18 inches from and parallel with each side wall.

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(5) Receiving Lines. Five feet back of the short line, vertical lines shall be marked on each side wall extending 3 inches from the floor. See rule 4.7(a).

Rule 2.2—Ball Specifications. The specifications for the standard racquetball are:

(a) Official ball. IRA's official ball is the blue Vittert V-77. The ball shall be 2¼ inches in diameter; weight approximately 1.40 ounces with a bounce at 67-72 inches from 100 inch drop at a temperature of 76 degrees F.

Rule 2.3—Ball Selection. A new ball shall be selected by the referee for use in each match in all tournaments. During a game the referee may, at his discretion or at the request of either player or team, select another ball. Balls that are not round or which bounce erratically shall not be used. The blue Vittert V-77 ball is official for all IRA sanctioned tournaments.

Rule 2.4—Racquet Specifications. The specifications for the standard racquetball racquet are:

(a) Official Racquet. Any racquet which carries the endorsed stamp of approval from the IRA is an official racquet.

(b) Dimensions. The official racquet will have a maximum head length of 11 inches and a width of 9 inches. These measurements are computed from the outer edge of the racquet head rims. The handle may not exceed 7 inches in length. Total length and width of the racquet may not exceed a total of 27 inches.

(c) The racquet must include a thong that must be securely wrapped on the player's wrist.

(d) The racquet frame may be made of any material, as long as it conforms to the above specifications.

(e) The strings of the racquet should be gut, monofilament or nylon. Metal or steel strings are permitted only if they do not mark or deface the ball.

Rule 2.5—Uniform. The basic body of the uniform must be of a light or bright color so as not to blend in with the darkness of the ball when it passes close to the body of the player. The uniform trim and shoes may be of any color. The front of the pants and shirt may contain a decal not measuring over five inches in any dimension. The decal may contain a club insignia or commercial advertising of any kind. The back of the uniform must be completely unadorned except that a player's name may be placed in one horizontal line across a shirt in letters not over three inches high. Doubles teams should wear similar colors to ease problems of referee identification. Warmup suits not worn in actual play may be of any color and may have any insignia anywhere. Players may not play without shirts in tournament competition.

PART III. OFFICIATING

Rule 3.1—Tournaments. All tournaments shall be managed by a committee or chairman, who shall designate the officials.

Rule 3.2—Officials. The officials shall include a referee and a scorer. Additional assistants and record keepers may be designated as desired.

Rule 3.3—Qualifications. Since the quality of the officiating often determines the success of each tournement, all officials shall be experienced or trained, and shall be thoroughly familiar with these rules and with the local playing conditions.

Rule 3.4—Rule Briefing. Before all tournaments, all officials and players shall be briefed on rules and on local court hinders or other regulations.

Rule 3.5—Referees. (a) Pre-Match Duties. Before each match commences, it shall be the duty of the referee to:

(1) Check on adequacy of preparation of the court with respect to cleanliness, lighting and temperature, and upon location of locker rooms, drinking fountains, etc.

(2) Check on availability and suitability of all materials necessary for the match such as balls, towels, score cards and pencils.

(3) Check readiness and qualifications of assisting officials.

(4) Explain court regulations to players and inspect the compliance of racquets with rules.

(5) Remind players to have an extra supply of adequate racquets and uniforms.

(6) Introduce players, toss coin, and signal start of first game.

(b) Decisions. During games the referee shall decide all questions that may arise in accordance with these rules. If there is body contact on the back swing, the player should call it quickly. On all questions involving judgment and on all questions not covered by these rules, the decision of the referee is final.

(c) Protests. Any decision not involving the judgment of the referee may on protest be decided by the chairman, if present, or his delegated representative.

(d) Forfeitures. A match may be forfeited by the referee when:

(1) Any player refuses to abide by the referee's decision, or engages in unsportsmanlike conduct.

(2) After warning, any player leaves the court without permission of the referee either during a game or between the first and second games.

(3) Any player for a singles match, or any team for a doubles match fails to report to play. Normally, 20 minutes from the scheduled game time will be allowed before forfeiture. The tournament chairman may permit a longer delay if circumstances warrant such a decision.

(4) If both players for a singles, or both teams for doubles fail to appear to play for consolation matches or other playoffs, they shall forfeit their ratings for future tournaments, and forfeit any trophies, medals, or awards.

(5) A third technical foul is assessed to any one player or team during the course of a match. See Rule 4.13.

Rule 3.6 - Scorers. The scorer shall keep a record of the progress of the game in the manner prescribed by the committee or chairman. As a minimum the progress record shall include the order of serves, outs, and points. The referee or scorer shall announce the score before each serve.

Rule 3.7—Record Keepers. In addition to the scorer, the committee may designate additional persons to keep more detailed records for statistical purposes of the progress of the game.

PART IV. PLAY REGULATIONS

Rule 4.1—Serve, Generally. (a) Order. The player or side winning the toss becomes the first server and starts the first game, and the third game, if any.

(b) Start. Games are started by the referee calling "play ball."

(c) Place. The server may serve from any place in the service zone. No part of either foot may extend beyond either line of the service zone. Stepping on the line (but not beyond it) is permitted. Server must remain in the service zone until the served ball passes short line. Violations are called "foot faults."

(d) Manner. A serve is commenced as the ball leaves the server's hand. The ball must bounce to the floor in the service zone and on the first bounce be struck by the server's racquet so that it hits the front wall first and on the rebound hits the floor back of the short line, either with or without touching one of the side walls.

(e) Readiness. Serves shall not be made until the receiving side is ready, or the referee has called play ball.

Rule 4.2—Serve, In Doubles. (a) Server. At the beginning of each game in doubles, each side shall inform the referee of the order of service, which order shall be followed throughout the game. Only the first server serves the first time up and continues to serve first throughout the game. When the first server is out–the side is out. Thereafter both players on each side shall serve until a hand-out occurs. It is not necessary for the server to alternate serves to their opponents.

(b) Partner's Position. On each serve, the server's partner shall stand erect with his back to the side wall and with both feet on the floor within the service box until the served ball passes the short line. Violations are called "foot faults."

Rule 4.3–Defective Serves. Defective serves are of three types resulting in penalties as follows:

(a) Dead Ball Serve. A dead ball serve results in no penalty and the server is given another serve without cancelling a prior illegal serve.

(b) Fault Serve. Two fault serves result in a hand-out.

(c) Out Serves. An out serve results in a hand-out.

Rule 4.4–Dead Ball Serves. Dead ball serves do not cancel any previous illegal serve. They occur when an otherwise legal serve:

(a) Hits Partner. Hits the server's partner on the fly on the rebound from the front wall while the server's partner is in the service box. Any serve that touches the floor before hitting the partner in the box is a short.

(b) Screen Balls. Passes too close to the server or the server's partner to obstruct the view of the returning side. Any serve passing behind the server's partner and the side wall is an automatic screen.

(c) Court Hinders. Hits any part of the court that under local rules is a dead ball.

Rule 4.5–Fault Serves. The following serves are faults and any two in succession result in a handout:

(a) Foot Faults. A foot fault results:

(1) When the server leaves the service zone before the served ball passes the short line.

(2) When the server's partner leaves the service zone before the served ball passes the short line.

(b) Short Serve. A short serve is any served ball that first hits the front wall and on the rebound hits the floor in front of the back edge of the short line either with or without touching one side wall; or

(c) Three-Wall Serve. A two-side serve is any ball served that first hits the front wall and on the rebound hits two side walls on the fly.

(d) Ceiling Serve. A ceiling serve is any served ball that touches the ceiling after hitting the front wall either with or without touching one side wall.

(e) Long Serve. A long serve is any served ball that first hits the front wall and rebounds to the back wall before touching the floor.

(f) Out of Court Serve. Any ball going out of the court on the serve.

Rule 4.6–Out Serves. Any one of the following serves results in a handout:

(a) Bounces. Bouncing the ball more than three times while in the service zone before striking the ball. One bounce is counted each time the ball hits the floor within the service zone. Once the server is within the service zone and the receiver is ready, the ball may not be bounced anywhere but on the floor within the service zone. Accidental dropping of the ball counts as one bounce.

(b) Missed Ball. Any attempt to strike the ball on the first bounce that results either in a total miss or in touching any part of the server's body other than his racquet.

(c) Non-front Serve. Any served ball that strikes the server's partner, or the ceiling, floor or side wall, before striking the front wall.

(d) Touched Serve. Any served ball that on the rebound from the front wall touches the server, or touches the server's partner while any part of his body is out of the service box, or the server's partner intentionally catches the served ball on the fly.

(e) Out-of-Order Serve. In doubles, when either partner serves out of order. Any points which may have been scored during an out-of-order serve will be automatically void with the score reverting to the score prior to the out-of-order serve.

(f) Crotch Serve. If the served ball hits the crotch in the front wall it is considered the same as hitting the floor and is an out. A crotch serve into the back wall is good and in play.

Rule 4.7–Return of Serve. (a) Receiving Position. The receiver or receivers must stand at least 5 feet back of the short line, as indicated by the 3 inch vertical line on each side wall, and cannot return the ball until it passes the short line. Any infraction results in a point for the server.

(b) Defective Serve. To eliminate any misunderstanding the receiving side should not catch or touch a defectively served ball until called by the referee or it has touched the floor for the second time.

(c) Fly Return. In making a fly return, no part of the receiver's body or racquet may enter into the service zone. A violation by a receiver results in a point for the server.

(d) Legal Return. After the ball is legally served, one of the players on the receiving side must strike the ball with his racquet either on the fly or after the first bounce and before the ball touches the floor the second time to return the ball to the front wall either directly or after touching one or both side walls, the back wall or the ceiling, or any combination of those surfaces. A returned ball may not touch the floor before touching the front wall. (1) It is legal to return the ball by striking the ball into the back wall first, then hitting the front wall on the fly or after hitting the side wall or ceiling.

(e) Failure to Return. The failure to return a serve results in a point for the server.

Rule 4.8—Changes of Serve. (a) Handout. A server is entitled to continue serving until:

(1) Out Serve. He makes an out serve under Rule 4.6 or;

(2) Fault Serves. He makes two fault serves in succession under Rule 4.5, or;

(3) Hits Partner. He hits his partner with an attempted return before the ball touches the floor a second time.

(4) Return Failure. He or his partner fails to keep the ball in play by returning it as required by Rule 4.7(d).

(5) Avoidable Hinder. He or his partner commits an avoidable hinder under Rule 4.11.

(b) Side-out (1) In Singles. In singles, retiring the server retires the side.

(2) In Doubles. In doubles, the side is retired when both partners have been put out, except on the first serve as provided in Rule 4.2(a).

(c) Effect. When the server or the side loses the serve, the server or serving side shall become the receiver; and the receiving side, the server; and so alternately in all subsequent services of the game.

Rule 4.9—Rallies. Each legal return after the serve is called a rally. Play during rallies shall be according to the following rules:

(a) One or Both Hands. Only the head of the racquet may be used at any time to return the ball. The ball must be hit with the racquet in one or both hands. Switching hands to hit a ball is out. The use of any portion of the body is an out.

(b) One Touch. In attempting returns, the ball may be touched only once by one player on the returning side. In doubles both partners may swing at, but only one may hit the ball. Each violation of (a) or (b) results in a handout or point.

(c) Return Attempts.(1) In Singles. In singles, if a player swings at but misses the ball in play, the player may repeat his attempts to return the ball until it touches the floor the second time.

(2) In Doubles. In doubles if one player swings at but misses the ball, both he and his partner may make further attempts to return the ball until it couches the floor the second time. Both partners on a side are entitled to an attempt to return the ball.

(3) Hinders. In singles or doubles, if a player swings at but misses the ball in play, and in his, or his partner's attempt again to play the ball there is an unintentional interference by an opponent it shall be a hinder. (See Rule 4.10).

(d) Touching Ball. Except as provided in Rule 4.10, (a)(2), any touching of a ball before it touches the floor the second time by a player other than the one making a return is a point or out against the offending player.

(e) Out of Court Ball. (1) After Return. Any ball returned to the front wall which on the rebound or on the first bounce goes into the gallery or through any opening in a side wall shall be declared dead and the serve replayed.

(2) No Return. Any ball not returned to the front wall, but which caroms off a player's racquet into the gallery or into any opening in a side wall either with or without touching the ceiling, side or back wall, shall be an out or point against the players failing to make the return.

(f) Dry Ball. During the game and particularly on service every effort should be made to keep the ball dry. Deliberately wetting shall result in an out. The ball may be inspected by the referee at any time during a game.

(g) Broken Ball. If there is any suspicion that a ball has broken on the serve or during a rally, play shall continue until the end of the rally. The referee or any player may request the ball be examined. If the referee decides the ball is broken or otherwise defective, a new ball shall be put into play and the point replayed.

(h) Play Stoppage. (1) If a player loses a shoe or other equipment, or foreign objects enter the court, or any other outside interference occurs, the referee shall stop the play. (2) If a player loses control of his racquet, time should be called after the point has been decided, providing the racquet does not strike an opponent or interfere with ensuing play.

Rule 4.10—Dead Ball Hinders. Hinders are of two types—"dead ball" and "avoidable." Dead ball hinders as described in this rule result in the point being replayed. Avoidable hinders are described in Rule 4.11.

(a) Situations. When called by the referee, the following are dead ball hinders:

(1) Court Hinders. Hits any part of the court which under local rules is a dead ball.

(2) Hitting opponent. Any returned ball that touches an opponent on the fly before it returns to the front wall.

(3) Body Contact. Any body contact with an opponent **that interferes** with seeing or returning ball.

(4) Screen Ball. Any ball rebounding from the front wall close to the body of a player on the side which just returned the ball, to interfere with or prevent the returning side from seeing the ball. See Rule 4.4(b).

(5) Straddle Ball. A ball passing between the legs of a player on the side which just returned the ball, if there is no fair chance to see or return the ball.

(6) Other Interference. Any other unintentional interference which prevents an opponent from having a fair chance to see or return the ball.

(b) Effect. A call by the referee of a "hinder" stops the play and voids any situation following, such as the ball hitting a player. No player is authorized to call a hinder, except on the back swing and such a call must be made immediately as provided in Rule 3.5(b). The decision of the referee will be final as to whether or not the violation impeded the ensuing rally.

(c) Avoidance. While making an attempt to return the ball, a player is entitled to a fair chance to see and return the ball. It is the duty of the side that has just served or returned the ball to move so that the receiving side may go straight to the ball and not be required to go around an opponent. The referee should be liberal in calling hinders to discourage any practice of playing the ball where an adversary cannot see it until too late. It is no excuse that the ball is "killed," unless in the opinion of the referee the ball could not be returned. Hinders should be called without a claim by a player, especially in close plays and on game points.

(d) In Doubles. In doubles, both players on a side are entitled to a fair and unobstructed chance at the ball and either one is entitled to a hinder even though it naturally would be his partner's ball and even though his partner may have attempted to play the ball or that he may already have missed it. It is not a hinder when one player hinders his partner.

Rule 4.11—Avoidable Hinders. An avoidable hinder results in an "out" or a point depending upon whether the offender was serving or receiving.

(1) Failure to Move. Does not move sufficiently to allow opponent his shot.

(2) Blocking. Moves into a position effect[illegible] block, on the opponent about to return the ball, or, in doubles, one partner moves in front of an opponent as his partner is returning the ball, or

(3) Moving into Ball. Moves in the way and is struck by the ball just played by his opponent.

(4) Pushing. Deliberately pushing or shoving an opponent during a rally.

Rule 4.12—Rest Periods. (a) Delays. Deliberate delay exceeding ten seconds by server, or receiver shall result in an out or point against the offender.

(b) Time Outs. During a game each player in singles, or each side in doubles, either while serving or receiving may request a "time out" for a towel, wiping glasses, change or adjustment. Each "time out" shall not exceed 30 seconds. No more than three "time outs" in a game shall be granted each singles play or each team in doubles. No player may call a time out once the ball is in play. See Rule 4.1(d).

(c) Injury. No time out shall be charged to a player who is injured during play. An injured player shall not be allowed more than a total of fifteen minutes of rest. If the injured player is not able to resume play after total rests of 15 minutes the match shall be awarded to the opponent or opponents. On any further injury to same player, the Commissioner, if present, or committee, after considering any available medical opinion shall determine whether the injured player will be allowed to continue.

(d) A time out may be called by the referee, at the request of a player and after substantiation by the referee, because of faulty equipment or uniform. Two minutes are to be allowed for any uniform adjustment needed and 30 seconds for any equipment adjustment.

(e) Between Games. A two minute rest period is allowed between the first and second games, at which times the players should NOT leave the court, without approval of the referee. A ten minute rest period is allowed between the second and third games, at which time players may leave the court.

(f) Postponed Games. Any games postponed by referee shall be resumed with the same score as when postponed.

Rule 4.13—Technical Foul. Results in a point or side out. It may be called by a referee at anytime, whenever he feels that a player has executed or exhibited unsportsmanlike conduct either vocally or by any other means during the course of a match. A third technical foul called upon any one single player during the course of a match will result in the automatic immediate forfeiture of that match.

Rule 4.14—Age Group Divisions. Age is determined as of the first day of the tournament.

(1) Female. Open division only. (This is subject to change, at the discretion of the tournament committee, depending on the size of the draw.)

(2) Male.

(a) Junior Open—18 and under.
(b) Open—everyone is eligible.
(c) Senior Open—35 years and over.
(d) Masters—45 years and over.
(e) Golden Masters—55 years and over.

(3) Doubles Teams. Ages apply as above.

PART V. TOURNAMENTS

Rule 5.1—Draws. (a) If possible, all draws shall be made at least two days before the tournament commences. The seeding method of drawing shall be approved by the International Racquetball Association.

(b) The draw and seeding committee shall be chaired by the IRA Executive Director and shall consist of the Executive Director, the National Co-ordinator, National Seeding Chairman, and the host tournament chairman. No other persons shall participate in the draw or seeding unless at the invitation of the draw and seeding committee.

(c) In local, state and regional tournaments the draw shall be the responsibility of the tournament chairman. In regional play the tournament chairman should work in co-ordination with the IRA representative at the tournament.

Rule 5.2—Scheduling (a) Preliminary Matches. If one or more contestants are entered in both singles and doubles, they may be required to play both singles and doubles on the same day or night with little rest between matches. This is a risk assumed on entering both singles and doubles. If possible the schedule should provide at least a one hour rest period between all matches.

(b) Final Matches. Where one or more players have reached the finals in both singles and doubles, it is recommended that the doubles match be played on the day preceding the singles. This would assume more rest between the final matches. If both final matches must be played on the same day or night, the following procedure is recommended:

(1) The singles match be played first.

(2) A rest period of not less than ONE HOUR be allowed between the finals in singles and doubles.

Rule 5.3—Notice of Matches. After the first round of matches, it is the responsibility of each player to check the posted schedules to determine the time and place of each subsequent match. If any change is made in the schedule after posting, it shall be the duty of the committee or chairman to notify the players of the change.

Rule 5.4—Third Place. In championship tournaments; national, regional, state, etc., the loser in the semi-finals must play for third place or lose his ranking for the next year unless he is unable to compete because of injury or illness. See Rule 3.5(d)(4);

Rule 5.5—IRA Regional Tournaments. The United States and Canada are divided into a combined total of ten regions.

(a) A player may compete in only one regional tournament per event.

(b) A player may make his own choice of the regional in which he wishes to compete.

(c) A player can participate in only two events in a regional tournament.

(d) Awards and remuneration to the IRA International Championships will be posted on the entry blank.

Rule 5.6—Tournament Management. In all IRA-sanctioned tournaments the tournament chairman and/or the national IRA official in attendance may decide on a change of courts after the completion of any tournament game if such a change will accommodate better spectator conditions.

Rule 5.7—Tournament Conduct. In all IRA-sanctioned tournaments the referee is empowered to default a match if an individual player or team conducts itself to the detriment of the tournament and the game.

Rule 5.8—IRA Eligibility. Any paid-up IRA member in good standing may compete in any IRA-sanctioned tournament.

Rule 5.9—IRA International Championships. Starting in 1974, the International Singles and International Doubles are separated and will be played on two different weekends, with only four days (Thursday, Friday, Saturday and Sunday) allotted to each tournament. Each age category will be limited to a maximum 64-player draw. Each player will be limited to one event. There will be a consolation round in each division.

(1) Qualifying, Singles. A player will have to qualify at one of the ten regional tournaments. See Rule 5.5(a).

(a) The International Ratings Committee will handle the rating of each region and determine how many players shall qualify from each regional tournament.

(b) All International finalists in each division will be exempt from qualifying for the same division the following year.

(c) There will be a tournament one day ahead of the International Tournament, at the same site, to qualify eight players in each division who were unable to qualify or who failed to qualify in the regionals. This rule is in force only when a division is obviously over-subscribed for the 64-player limit.

(2) Qualifying, Doubles. There will be no regional qualifying for doubles.

Rule 5.10—Intercollegiate Tournament. It will be conducted at a separate date and location.

Rule 5.11—Invitational Tournaments. Eligibility by invitation only to the top 16 players or teams.

Rule 5.12—Round Robin Invitational Tournaments. Consist of 10 players (singles) or 10 teams (doubles). Tournament is conducted over three consecutive days. Each day's play consists of three (3) matches played on a round robin basis. Each match consists of one 31-point game. An individual or team limit of four times out is permitted for each match.

Basically racquetball rules for one-wall, three-wall and four-wall are the same with the following exceptions:

ONE-WALL & THREE-WALL

ONE-WALL—Court Size—Wall shall be 20 ft. in width and 16 ft. high, floor 20 ft. in width and 34 ft. from the wall to the back edge of the long line. There should be a minimum of 3 feet beyond the long line and 6 feet outside each side line and behind the long line to permit movement area for the players.

Short Line—Back edge 16 feet from the wall. Service Markers—Lines at least 6 inches long parallel to and midway between the long and short lines, extending in from the side lines. The imaginary extension and joining of these lines indicates the service line. Lines are 1½ inches in width. Service Zone—floor area inside and including the short, side and service lines. Receiving Zone—floor area in back of short line bounded by and including the long and side lines.

THREE-WALL–Serve–A serve that goes beyond the side walls on the fly is player or side out. A serve that goes beyond the long line on a fly but within the side walls is the same as a "short."

WE NEED YOUR HELP!

The Racquetball Committee is concerned with the nature of the content for this very first edition of the 1976-78 *Guide*. We want it to meet the needs of the professionals it serves. To that end, we solicit your response to any or all of the following:

1. Topics to be included.
2. Specific authorities from whom contributions could be invited.
3. Possible inclusion of a "question-and-answer" section which would speak of issues not lengthy enough to constitute a complete article. If you believe such a section would be valuable, it would be helpful if you would send questions of interest. If you choose, you might also submit the names of potential respondents.
4. The format for articles which have been included in the Guides for other sports may be appropriate for the next *Racquetball Guide*. Your suggestions and ideas will be welcomed. Or you may wish to suggest additions and/or deletions.

All comments should be mailed to –

Jo Oliver
Department of Physical Education
California State Polytechnic University
Pomona, CA 91768

Remember, the *Guide* is meant to meet *your* needs. It will do so only if you take a few minutes to help us identify them.

Racquetball's Success Story: The Reason Why

CAROLYN M. LEWIS

Carolyn Lewis is an instructor and coach in the department of physical education for women, San Jose, State University, San Jose, California. She received her B.A. degree from San Jose State College, San Jose, California and M.S. degree from Washington State University, Pullman. She has had experience coaching and teaching on the high school and intercollegiate level and played racquetball for the past seven years.

Racquetball is one of the fastest growing recreational and conditioning sports in the United States. Within the last decade, the sport has been transformed from the status of one of two people occasionally playing on an empty handball court to one in which businessmen and housewives are joining private clubs and standing in line to get court time.

The game is especially flourishing in the South, Midwest and Southern California. In San Diego alone, known as the West Coast capitol of racquetball, there are over 10,000 players and over 100 courts. In some areas they are not able to build courts fast enough to meet the demand of players.

Racquetball is a sport that provides instant success to the participant. In fact, it is called by many the "instant success game." The rules are few and easy to learn, and the strokes similar to the other racquet sports making the game simple to play. After a minimal amount of instruction, beginners are able to sustain vigorous and enjoyable rallies. With a little practice and experience, one can easily learn a variety of shots to enhance the challenge of the game. There is an unlimited variation of shot combinations of front, side, back and ceiling shots.

The game is very similar to handball but because of the short racquet it is much easier. The game's objective is to hit a small rubber ball against a forward wall to make it difficult for an opponent to return the shot before the ball touches the floor twice. After the serve, any combination of the court's four walls or ceiling may be used to return the ball to the front wall. Two, three, or four people may compete in singles, doubles or cutthroat play.

Besides being a relatively easy game to learn and play, racquetball offers other advantages:

1. Little equipment is needed and the costs are low. There is no need for special clothing and racquets range in price from $5 to $35.

One, three and four wall courts may be found at schools, apartment complexes, YMCAs and private handball/racquetball clubs.

2. It's an extremely good conditioning activity. Because the ball stays in play so long, you can get a fantastic workout. In his book *Aerobics,* Dr. Kenneth Cooper indicates that 35 minutes of singles play can equal running a mile at an eight-minute pace. Racquetball, as well as improving cardiorespiratory endurance, appears to improve muscular endurance, coordination, agility, reaction time and response time. It is one of the few sports in which you can practice on a court by yourself and get a tremendous workout.

3. Racquetball may be enjoyed by both sexes on a relatively even basis. The differences are more pronounced between experienced players and novices than between the sexes.

These are just a few of the many reasons for taking up the sport of racquetball. If you want a good workout, feel absolutely great, and above all enjoy yourself, *play racquetball!*

A Basic Racketball Course Outline for High School or College

CAROLYN M. LEWIS

(Carolyn Lewis' biography appears on page 115.)

The following outline is designed to identify the basic skills, strategies and knowledges that should be included in a beginning instructional unit on racquetball:

I. Orientation and Overview of Game
  A. History and review of current status
  B. Court etiquette and safety
  C. Equipment care, repair, and purchase
  D. Handling the racquet
    1. Forehand grip
    2. Backhand grip
    3. Forehand stroke
    4. Backhand stroke
    5. Footwork
    6. Backwall techniques

II. Serves
  A. Low drive serve
  B. V serve
  C. Lob serve
  D. Low Z serve
  E. High Z serve

III. Shots
  A. Defensive
    1. Forehand ceiling
    2. Backhand ceiling
  B. Offensive
    1. Around-the-wall
    2. Front wall kill
    3. Pinch shot
    4. Front-wall-side-wall kill
    5. Off-the-back-wall kill
    6. Drop shots
    7. Passing shots
      a. Down-the-wall pass
      b. V pass
    8. Overhead kill
    9. Overhead drive

IV. Basic Game Strategy
  A. Serving
    1. Singles
    2. Doubles
  B. Return of serve
  C. Court position
    1. Front court
    2. Middle court
    3. Back court
  D. Singles
  E. Doubles play
    1. Front and back court coverage
    2. Half and half court coverage
  F. Variation of play

V. Rules of the Game
  A. International Racquetball Association
    1. Four-wall
    2. Three-wall
    3. One-wall
  B. Variations of Play
    1. "Cutthroat"
    2. "Standout"

Pro? Amateur? Novice? A Reciprocal Evaluation Teaching Device

JOY KOPPEL

A racquetball instructor at California State University, Long Beach (California), women's physical education department, Joy Koppel was racquetball champion in 1974; runnerup, national 3-wall racquetball the same year; and regional mixed doubles racquetball winner in 1975. She holds a B.A. degree in physical education from California State where she organized the first intercollegiate racquetball league in the Los Angeles area.

Name of Player

Check if he/she looks like:

Name of Rater

Shot	Good Points	Pro	Amateur	Novice
SERVE	Begins each serve from center court. Places ball in back corners of court. Uses several types of serves. Serves to opponent's weak side.			
KILL	Waits for ball to drop low before hitting. *Rolls* ball off front wall. Hits forehands to right corner (right handed). Hits backhands to left corner (right handed). Shoots ball away from opponent.			
PASS	Angles ball off front wall so that it lands in the back corners. Hits pass at about waist level. Places pass away from opponent.			
CEILING	Places ball on front ceiling first, then on top of front wall. Hits ball so it dies just in front of the back wall. Places ball in back left corner.			

Game Strategy and Procedures

Circle the letter that best describes performance:

1. Court Coverage
   - a. Controls center court for the best court coverage.
   - b. Runs 100 mph all over the court and sweats a lot!
   - c. Stands in one place – a statue.
2. Stroke Placement
   - a. Keeps opponent running by using deception.
   - b. Sometimes makes opponent move to the ball.
   - c. Always rallies to the middle of the wall – SET UP!
3. Safety and Etiquette
   - a. Calls unavoidable hinders and allows room for opponent to hit shot.
   - b. Occasionally blocks a shot or does not give opponent room.
   - c. Aims for opponent instead of wall – OUCH!!

SCORING: a. Got it together
b. Polish it up
c. YOU NEED HELP

Game Variations for Racquetball

JO OLIVER

Jo Oliver is an assistant professor in physical education at California State Polytechnic University, Pomona. She received her B.S. degree at Oklahoma Agricultural and Mechanical College, her M.H.P.E. at North Texas State College and her Ed.D. at Oklahoma State University. She has taught at the high school level in Dallas and South San Francisco and at the college level at San Jose State University and Cal Poly, Pomona.

Games with Three Players

One of the most popular three-player games is called *cutthroat*. One player serves to the other two until he or she loses the volley. Points are earned on an individual basis, the same as in the official game. When the server loses the turn at service, he or she rotates back to the receiving position. The left receiver rotates to become the new server while the partner rotates to the left receiving position (clockwise rotation).

The server should utilize the court strategy for singles and the receivers should play some type of doubles strategy. Cutthroat requires the abilities and skills for both strategies and the mental alertness to change and adjust readily.

A second game similar to cutthroat but more challenging for one singles player is known as *one-on-two*. The "one" (or singles) player plays the other "two" (or doubles) players throughout the game. The "two" players alternate serving, and the "one" player may get one or two serves, depending on the rules set up among the players. One-on-two provides a real challenge to the "one" player who wants to improve in singles play.

The third three-player game is actually singles with a different person "standing out" on each rally for a point. Points are scored, however, only by the server as in the official game. Score is kept individually. In the game of *stand-out*, the play may follow a pattern similar to this sequence: Player A serves, B receives, and C stands out. If A makes a point he or she continues to serve, C receives and B stands out. There is a different receiver for each rally, but not necessarily a different server. The player "standing out" may remain on the court, but must avoid standing near any area where the ball is being played.

Games for More than Four to a Court

Practices, drills and modified games with as many as eight games with as many as eight to a court may be organized, particularly on three wall courts, using a "stand-out" sequence. With an odd number of players, up to three (no more than five per court) may rotate in for singles' style "stand-out." However, on four wall courts it is not advisable to have more than one player "standing out" inside the court area at one time.

Doubles play may, also, be facilitated through the "stand out" sequence. Rules for what constitutes a turn at service (or hand-out) need to be determined. For example, a partnership may receive one hand-out only and must rotate to a "stand out" position when they ease a rally while the previous receivers become servers and the next "stand-out" partnership becomes receivers. Or two hand-outs may be allowed before the serving partnership rotates out. Score is kept by each set of partners. Again, the players "standing out" in doubles must remain outside the four walls during play or there will be too much congestion on the court.

Numerous variations may be set up for doubles "stand-out," such as agreeing to use a serving order similar to table tennis. Actually, this article is an appeal to the instructor who may have only four or five courts and 30 to 40 students per class. Game-like situations are possible and competition and tournaments can be accomplished without there being too much inactivity. A little cooperation and imagination are all it takes to involve even the larger classes in this exciting, success-oriented sport of racquetball.

Simplified Rules — Extract from IRA Rules

JACK ROSE

Jack W. Rose is a professor at California State University - Long Beach. He received his B.S. and M.A. degrees at the University of Michigan and his Ph.D. at the University of Southern California. He is currently president of the U.S. Track Coaches and is a member of the National Track and Field Hall of Fame.

1. Points are scored only by the serving side when it serves an ace or wins a volley. When the serving side loses a volley, it loses the service. Losing the serve is called an "out" in singles and a "hand-out" in doubles.

2. A game is won by the side first scoring 21 points.

3. A match is won by the side first winning two games.

4. The racquet must include a thong that must be securely wrapped around the player's wrist at all times during play.

5. The server may serve from any place in the service zone. No part of either foot may extend beyond either line of the service zone. Stepping on the line (but not beyond it) is permitted. Server must remain in the service zone until the served ball passes the short line. Violations of this rule are called foot faults.

6. A serve is commenced by bouncing the ball to the floor in the service zone, and on the first bounce, the ball is struck by the server's racquet so that it hits the front wall and on the rebound hits the floor back of the short line, either with or without touching one of the side walls.

7. Serves shall not be made until the receiving side is ready.

8. On each serve in doubles, the server's partner shall stand erect with his back to the side wall and with both feet on the floor within the service box until the served ball passes the short line. Violations of this rule are called foot faults.

9. A dead ball serve results in no penalty and the server is given another serve without cancelling a prior illegal service.

10. Two fault serves result in a hand-out.

11. DEAD BALL SERVES

A. Ball hits the server's partner on the fly on the rebound from the front wall while the server's partner is in the service box. Any serve that touches the floor before hitting the partner in the box is a short.

B. Screen balls – ball passes too close to the server or the server's partner to obstruct the view of the returning side. Any serve passing behind the server's partner and the side wall is an automatic screen.

C. Court hinders occur when the ball hits any part of the court then under local rules; considered a dead ball.

12. FAULT SERVES. The following serves are faults and any two in succession result in a hand-out.

A. A foot fault when the server leaves the service zone before the served ball passes the short line.

B. A foot fault when the server's partner leaves the service box before the served ball passes the short line.

C. A short serve is any served ball that first hits the front wall and on the rebound hits the floor in front of the back edge of the short line either with or without touching one side wall.

D. A two side serve is any ball served that first hits the front wall and on the rebound hits two side walls on the fly.

E. A ceiling serve is any served ball that touches the ceiling after hitting the front wall either with or without touching one side wall.

F. A long serve is any served ball that first hits the front wall and rebounds to the back wall before touching the floor.

13. OUT SERVES. Any *one* of the following serves results in a hand-out.

A. Bouncing the ball more than three times while in the service zone before striking the ball. A bounce is a drop or throw to the floor, followed by a catch. The ball may not be bounced anywhere but on the floor within the service zone. Accidental dropping of the ball counts as one bounce.

B. Any attempt to strike the ball on the first bounce that results either in a total miss or in touching any part of the server's body other than the racquet.

C. Any served ball that strikes the server's partner, or the ceiling, floor or side wall, before striking the front wall.

D. Any served ball that on the rebound from the front wall touches the server, or touches the server's partner while any part of his body is out of the service box, or the server's partner intentionally catches the served ball on the fly.

E. An out of order serve, in doubles, when either partner serves out of the established service order.

F. If the served ball hits the crotch in the front wall it is considered the same as hitting the floor and is an out. A crotch serve into the back wall is good and in play.

14. After the ball is legally served, one of the players on the receiving side must strike the ball with his racquet either on the fly or after the first bounce and before the ball touches the floor the second time to return the ball to the front wall either directly or after touching one or both side walls, the back wall or the ceiling, or any combination of those surfaces. A returned ball may not touch the floor before touching the front wall. It is legal to return the ball

by striking the ball into the back wall first, then hitting the front wall on the fly or after hitting the side wall or ceiling.

15. Only the head of the racquet may be used at any time to return the ball. The ball must be hit with the racquet in one or both hands. Switching hands to hit a ball is an out. The use of any portion of the body is an out.

16. The ball may only be hit once on the return, either in doubles or singles.

17. A ball being broken or damaged results in the concerned point being replayed.

18. When the ball hits any part of the court under local rules, it is considered a dead ball hinder and the point is replayed.

19. Any returned ball that touches an opponent on the fly before it returns to the front wall is considered a dead ball hinder and the point is replayed.

20. Any bodily contact with an opponent that interferes with seeing or returning the ball is considered a dead ball hinder and the point is replayed.

21. Any ball rebounding from the front wall close to the body of a player on the side which just returned the ball, so as to interfere with or prevent the returning side from seeing the ball is considered a dead ball hinder and the point is replayed.

22. A ball passing between the legs of a player on the side which has just returned the ball, if there is no fair chance to see or return the ball is considered a dead ball hinder and the point is replayed.

23. Failure to move to give the opponent a sufficient chance or opportunity to shoot results in an avoidable hinder and an out.

24. Blocking, or moving into a position effecting a block on the opponent about to return the ball, or, in doubles, one partner moves in front of an opponent as his partner is returning the ball results in an avoidable hinder and an out.

25. Moving into the ball so that he is struck by a ball just played by the opponent results in an avoidable hinder and an out.

26. Deliberately pushing or shoving or shoving an opponent during a volley results in an avoidable hinder and an out.

27. Local hinders are established by players before commencing the game play (dead ball hinders). Examples of local hinders which may be established are ball striking objects such as court lights, door hinges or handles, and overhead court materials other than the ceiling (e.g., wire coverings). Players may either agree or disagree that the ball is dead when it strikes any of these objects but this determination must be made in advance of game play.

28. A serve that goes beyond the side walls on the fly is player or side-out in three-wall racquetball. A serve that goes beyond the long line on a fly is a fault (treated the same as a "short").

29. Any ball that lands on the painted line marking the outer boundaries of a three-wall or one-wall court is an "out" ball.

30. Any ball that lands outside the court is an "out" ball during play. (The only exception is the "long" serve. See #28.)

Test Your Knowledge of Simplified Rules

JACK ROSE

(Jack Rose's biography appears on page 123.)

True – False:

Read the questions carefully. Indicate your answer by writing true or false in the space provided in front of each question.

________ 1. Points are scored only by the serving side.
________ 2. Losing the serve is called an "out" in singles and a "hand-out" in doubles.
________ 3. A game is won by the side first scoring 15 points.
________ 4. A match is won by the side first winning three games.
________ 5. The thong on the racquet need not be wrapped around the player's wrist.
________ 6. Stepping on the line, in serving, is permitted.
________ 7. It is a foot fault if the server steps out of the service zone before the served ball passes the short line.
________ 8. In three-wall racquetball, a ball that bounces wide is always an "out" ball.
________ 9. Three fault serves result in a hand-out.
________ 10. Any serve that touches the floor in front of the back edge of the short line is a short – a fault.
________ 11. A serve that first hits the front wall and on the rebound hits two side walls on the fly is good.
________ 12. A served ball that touches the ceiling after hitting the front wall either with or without touching one side wall is o.k.
________ 13. A long serve is any served ball that first hits the front wall and rebounds to the back wall before touching the floor. It is a fault.
________ 14. It is an out serve if the server totally misses the ball with the racquet.
________ 15. It is an out if the ball strikes the side wall first on the serve.
________ 16. In doubles, when either partner serves out of the established service order, a hand-out should be called.
________ 17. If a served ball hits the crotch in the front wall it is considered the same as hitting the floor and is out.
________ 18. A crotch serve into the back wall is also out.
________ 19. After the ball is legally served, the receiving side must allow it to bounce on the floor once before hitting it.

______ 20. It is legal to return the ball by striking it to the back wall first, as long as it hits the front wall before touching the floor.

______ 21. Only the head of the racquet may be used at any time to return the ball.

______ 22. A player may switch the racquet from one hand to the other in order to return the ball.

______ 23. Any returned ball that touches an opponent on the fly before it returns to the front wall is considered a dead ball hinder and the point is replayed.

______ 24. Failure to move to give the opponent a sufficient chance or opportunity to hit results in an avoidable hinder.

______ 25. Any returned ball that touches your partner on the fly before it returns to the front wall is considered a dead ball hinder and the point is replayed.

Answer Key – Racquetball Quiz

1. True
2. True
3. False
4. False
5. False
6. True
7. True
8. True
9. False
10. True
11. False
12. False
13. True
14. True
15. True
16. True
17. True
18. False
19. False
20. True
21. True
22. False
23. True
24. True
25. False

3-Wall Racquetball Strategies

LINDA CROWN

Linda Crown is a graduate assistant at California State University, Long Beach seeking her second degree – B.S. in physical education. She graduated from the University of Florida in 1970 with a degree in zoology. In 1973 she was the California State singles champion, and in 1974 doubles champion in 3-wall racquetball.

The game of 3-wall racquetball has enjoyed the same phenomenal growth as the indoor game. Enthusiasts of all ages can be found practically anywhere facilities exist. In addition, many colleges and high schools now offer classes in this captivating sport.

There are probably several reasons for this tremendous popularity. First, the game is played on ordinary 3-wall handball courts* found at most schools and available for use at no cost. Second, 3-wall racquetball is played outdoors. This makes it especially appealing in areas like southern California and Florida where the weather is beautiful year-round. Third, none of the necessary skills is especially difficult to master and as a result even the rank beginner can have a great deal of fun participating. Interest in the sport has been further stimulated by the creation of a number of tournaments, both on local and national levels. In these tournaments, competitors are classified according to age and ability level so that everyone has a chance to be a winner.

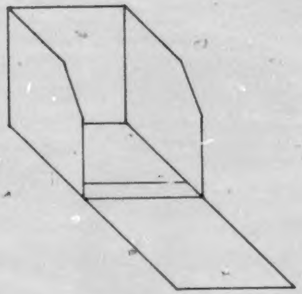

Figure 1.

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*Size of courts and shape of side walls sometimes vary.

Equipment, rules for play, and many of the skills needed in 3-wall racquetball are the same as those used in indoor play. Therefore, this article will focus on those aspects of the game that are unique to the 3-wall game.

The basic differences between the two games result from the differences in the courts on which they are played. As can be seen (Figure 1), the 3-wall court lacks a ceiling, a back wall and approximately ½ of the side walls. This eliminates ceiling shots and play off the back wall – important shots in indoor play.

However, with the elimination of the back wall, the pass and lob become highly effective strokes. Once the ball passes the opponent there is no back wall to return it to the court and the rally is over. This points out the importance of good foot speed. It is also important that the 3-wall player develop the ability to determine accurately when a ball is going to land outside the court boundaries. Some balls must be struck on the fly if court position is to be maintained and the return of a wide or long ball can cost the receiver an easy point.

Unlike the indoor game, the elements often play a part in 3-wall racquetball. A moderate wind can radically alter the path of a racquetball and make it more difficult to control. The position of the sun can also present problems. The long shadows in the later afternoon make judgment more difficult, as can lobs into the sun.

Strategy for 3-wall play is also based on the peculiarities of the court. Good strategy, whether it be for singles or doubles, involves forcing the opponent off the court, or at least well out of position for effective play. This can be accomplished in three major ways: deep 2-wall serves, "out the door" shots, and deep lobs.

Two-Wall Serve

The most common 2-wall serve travels high and lands deep in backcourt near the side boundaries (Figure 2). If the receiver waits

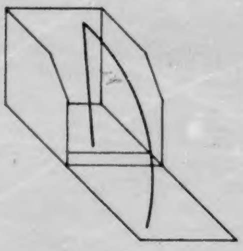

Figure 2.

until the ball bounces before she returns it, she will find herself far off the court and in a difficult position from which to make an effective return. Even if she makes a strong return, she has a considerable distance to travel before she is back to a good center court position.

The most effective return of this serve necessitates striking the ball on the fly and driving it down the sideline, or hitting a V-shot to place the ball deep on the opposite side of the court (difficult), or hitting a high 2-wall return to bring the opponent deep (Figure 3). The V-shot is most difficult as the angle must be precisely judged if the ball is to remain in bounds.

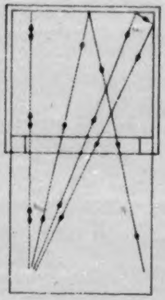

Figure 3.

"Out the Door" Shots

Another highly effective group of shots are those going "out the door." These are highly angled shots that bounce just behind the short serve line and close to the side wall before traveling out of bounds. Highly effective in both singles and doubles, if the receiver lets the ball bounce she finds herself with a very small angle for return because of the proximity of the side wall. Even if her return is successful, it is usually weak and frequently sets her opponent up for a kill or pass. To strike the ball before it bounces, both speed and good judgment are necessary. It must be determined rapidly whether the ball will bounce good or wide.

"Out the door" shots can be used both on the serve and during the rally. Ideal placement of the ball near the sideline and just behind the short service line will usually result in an ace. However, if hit more deeply or more towards center court, the receiver, by attacking the serve, can attempt a pass by driving the ball down the near sideline or to the server's backhand side (Figure 4).

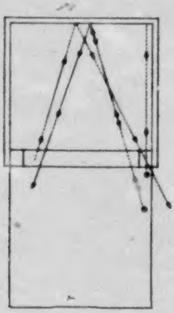

Figure 4.

During the rally, it will frequently be difficult to determine whether the ball will hit the side wall and return to the court or go "out the door." While a singles player must make a decision, a doubles team can cover both possibilities. The player nearest the sideline should go out to cover the "out the door" shot while her partner moves over to take the shot if it comes off the wall (Figure 5).

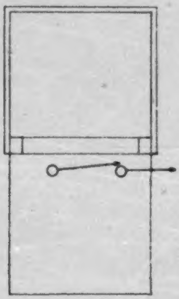

Figure 5.

The Lob

One last shot very useful in the 3-wall game is the lob. In addition to often being a very effective form of service, this [illegible] be either a defensive or offensive shot. Defensively, the lob is used to force the opponent out of center court or to "buy time" when a player is out of position. Moreover, frequent use of a good lob will often help to tire an opponent.

The lob becomes an offensive shot when the opponent is well in the front court, anticipating a kill, and instead the ball is flicked up high over her head to land deep in back court.

Defense against the lob is difficult. If it is known that the opponent uses this shot, a player should be alert to situations in which it would be effective and be ready to take advantage of a poor lob. A lob which falls short or is not out of reach overhead can frequently be killed or driven past the opponent. In doubles, one player should go back for the lob while her partner moves into position to cover the return.

Three-wall racquetball is a fast-moving, challenging game. In addition, when played regularly it can be a most enjoyable way to attain and maintain physical fitness. It is easy to see why it has enjoyed such rapid growth. Why not give it a try?

The Box Theory: Or How To Practice Your Kill Shot

JOY KOPPEL

(Joy Koppel's biography appears on page 119.)

Every sport has a play or shot with the same purpose as the kill shot in racquetball. In baseball, it is the home run; in golf, it is the hole in one. Both of these plays are designed for quick scoring yet carry a high risk factor.

The ideal kill shot rolls off the front wall within inches of the floor. For a player to achieve this "roll-out," he or she must aim for a general region of the court and shoot to that area repeatedly. This is the rationale behind the box theory.

Each shot in the box theory sequence must be placed in an imaginary, one-foot cubicle located in the front corners of the court.

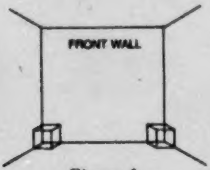

Figure 1.

Right-handers, therefore, will kill the forehand shot in the right-hand corner.

One strategic point must be understood. Most forehand kills should be placed in the forehand corner. Similarly, backhands must be directed towards the backhand corner (see Figure 2).

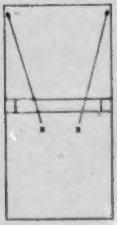

Figure 2.

There are two reasons for this:

1. When the offensive player is positioned on the forehand side, a down-the-alley kill will result in a sure winner because the defending player is blocked from the shot.

2. The forehand corner is the closest distance from the forehand setup shot, thereby allowing more control.

Box Theory of Kill Shot Practice

Step 1: Bounce and Kill Drills

A. Standing in the serving box, bounce the ball once, and shoot it right through the cubicle.

Three patterns must be practiced:

1. side-wall – front wall (Figure 3)
2. front-wall – side wall (Figure 4)
3. front-wall – down the wall (Figure 5)

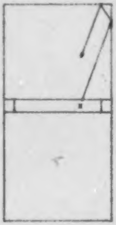

Figure 3.

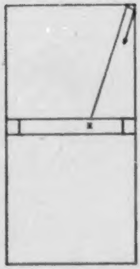

Figure 4.

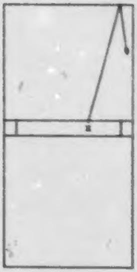

Figure 5.

B. Repeat sequence using the backhand cubicle.
C. Repeat sequence from back court position, again concentrating on the cubicle.

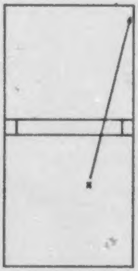

Figure 6.

Step 2. Stroke and Kill Drills

The identical sequence is used as in Step 1 except the ball is stroked after rebounding from the front wall first, making the drill more like a game situation. To perform these drills, stroke the ball against front wall so that it rebounds softly, then shoot the ball toward the corner cubicle.

Step 3. Advanced Drills

A. Stroke the ball high against the front wall so that it rebounds in the air. Kill the ball into the cubicle before it bounces.

B. Stroke the ball higher against the front wall so that it rebounds off the back wall. Make kill attempt into cubicle as ball moves toward front wall.

C. Hit ceiling shots until the ball bounces short, then kill into the appropriate forehand or backhand corner.

These drills require practice and concentration on consistently hitting the imaginary box. In time, these shots should become second-nature. Until then, think positively and imagine the ball rolling out of the corner time after time. With enough practice, it will:

Selecting Equipment for Racquetball

BARBARA ANDERSON

Barbara Anderson is an assistant professor at California State Polytechnic University in Pomona. She did her undergraduate work at Citrus College and San Jose State University. She received her master's degree in physical education at Pennsylvania State University and prior to coming to Cal Poly, taught at a high school in San Jose and at Cornell University, Ithaca, New York. Currently, Barbara is head volleyball coach and also coaches the Cal Poly badminton team.

The selection of equipment for racquetball, as with any racquet sport, becomes confusing as one views the variety of equipment available. The following will provide some general guidelines for choosing racquets, balls and clothing.

Racquets

In selecting a racquet, several characteristics of the racquet should be evaluated. Three types of frames are currently available – wood, fiberglass and aluminum – with some distinct advantages and/or disadvantages for each.

Wood Frames. Although the least expensive of the frames with a price range from $5 to $15, the wood frame offers few advantages beyond its cost. It is the heaviest of the racquets and offers none of the performance advantages associated with wood tennis racquet construction. The hitting characteristics – flexibility and weight – are inferior to both aluminum and fiberglass frames. Though inexpensive, the selection of wood racquets for classes and individual use is an exercise in false economy since the durability of the racquet is so limited: presses are required to deter warping; the frame is highly susceptible to cracking; and the weight and stiffness of the racquet do not contribute to effective play. In conclusion, wood racquets offer a low cost, low quality game.

Fiberglass Frames. Using a combination of nylon and fiberglass, this racquet construction offers the greatest flexibility of all the racquets, thereby contributing to greater ball control for soft and finesse shots since the ball can be carried longer on the strings. The fiberglass racquet costs $15 to $30. A 90-day guarantee usually accompanies the racquet. Although light in weight, the fiberglass construction is susceptible to breakage to a lesser degree than wood but is still less durable than aluminum frames. The greatest advantage of the fiberglass racquet is the degree of ball control which can be achieved with the lightweight, flexible racquet. An adjustment period of two to three weeks is necessary to learn to control the flex of the racquet.

Aluminum Frames. Though most expensive – $25 to $45 – the aluminum construction is by far the most durable racquet. A one-year guarantee usually accompanies the racquet. Several "playability" factors are offered: being more rigid than the fiberglass contributes to more potential power (and at the same time decreases ball control for beginning and average players); is lightweight and extremely durable; offers string protection by its grooved construction; accuracy of shots and "feel" increased with more rigid construction when compared to the flexibility of the fiberglass frame.

Other racquet features to consider along with construction include the following:

1. *Length and Weight.* Greater length contributes to power and reach, but limits quickness. A heavier racquet generally adds power, but also limits quickness. As a guideline, women's racquets usually run from 8.5 to 9.0 ounces and men's from 9.0 to 9.5 ounces. The balance and head weight are important to individual performance with these weights only offering a guide to selection.

2. *Grip: Leather or Rubber?* Leather grips generally land a firm feel to the racquet but can become tacky or slippery if one perspires heavily. The rubber grip is somewhat more absorbent than leather, but wears and tears more readily. A glove is recommended to aileviate some of these problems. Worn grips should be replaced – the use of tape for repair is not recommended. Grip size – should be comfortable and allow freedom of wrist movement. At the same time, the grip should not be so small that the racquet turns in the hand. If a glove is to be worn, try out grip sizes with the glove on the racquet hand.

3. *Strings.* Nylon strings are generally used because of the greater durability and lower cost compared to gut. Multi-filament nylon (such as Vangage) is generally recommended. When stringing, the guidelines for poundage are: fiberglass – 23 to 27 pounds, aluminum – 28 to 35 pounds.

4. *Thong.* A wrist thong is required by the rules and by the common sense of regard for safety. The thong must be used at all times and should be replaced if broken or frayed.

Balls

Several types of balls are available for play which have been approved by the International Racquetball Association. The official ball is now the Vittert V-77. Others include the Voit Roll-Out and the Seamco 558. All are pressurized balls and should rebound approximately 60 inches when dropped from a height of 100 inches.

The Trenway "Z-ball" is a nonpressurized ball with a hole in it – the major advantage of this ball is its longer life since it does not become "flat" or "dead." Balls can split or become depressurized with wear. Broken balls must be replaced; dead balls can be revived to some degree by using a hypodermic needle to insert more air, by gently boiling or by placing the ball in a whirlpool. Several repressuring devices which are designed to revitalize tennis balls can also be used to revive racquetballs.

Clothing

Generally, light colored clothing is recommended for play to avoid "losing" the dark ball on a similar background when dark colors are worn. The major concerns beyond color are comfort for the individual and absorbency, depending on the degree to which one perspires. Use of a glove for the racquet hand is recommended when one perspires heavily, not only for comfort but primarily for safety – racquet grips can become extremely slippery. Gloves made of a combination of terry cloth and leather are recommended over the all-leather glove – again, leather becomes slippery when soaked with perspiration. Eye goggles can also be worn to protect the eye and area surrounding the eyes. Several types are available which assure the eye will not be hit directly. Shoes should be comfortable and provide lateral support to prevent ankle sprains. The soles should assure quick starts and stops without sliding. For indoor courts with wood floors, gum rubber soles are recommended.

Although no rules of thumb can be established for purchasing equipment, several general hints should be added: (1) As with any purchase, try to match your budget, ability, size and strength with the factors discussed above; (2) consider durability along with the playing characteristics of racquets and arrange to "test" the racquet by borrowing and playing with the models under consideration; (3) mail in the guarantee registration on aluminum and fiberglass racquets. Price is not necessarily a good indicator of quality. Poor quality play is more the result of poor strokes than a poor racquet; however, good equipment does give one an advantage.

The Attack: Four Basic Serves

JOY KOPPEL

(Joy Koppel's biography appears on page 119.)

The serve, in a competitive game of racquetball, is by far the most important fundamental to be mastered. Not only does the serve initiate the action during a game, but it also allows the server to maintain center court coverage. This center position serves two purposes – (1) the server is in position to disguise his shot, thereby keeping his opponent guessing and (2) he is in position to control play by choosing from a wide variety of shots. From this position he may play to his opponent's weakness (usually the backhand) and cover his return.

Once the court position is established, the server must analyze the situation to decide which serve will be most effective. The physical condition of both him and his opponent, their comparative skill level and the current game score must be considered.

The four basic serves can be hit to either back corner, thereby creating eight service options. Figure 1 indicates the best placement for each serve.

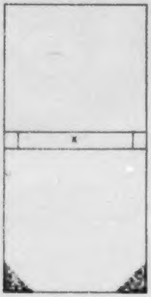

Figure 1.

Low Drive

The low drive serve is probably the most common. It should be hit approximately three feet up on the front wall slightly off center. Medium to three-quarter speed is put on this shot which should hit low in the backhand corner, catch the side wall, and die in the corner. This serve, by nature, creates a great deal of racquetball action and results in a fast-paced game. The low drive is most successful if the receiver lacks quickness or is fatigued (Figure 2).

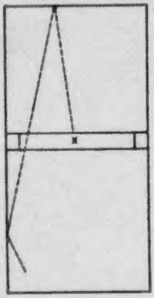

Figure 2.

Z Serve

This serve is also popular and can cause the receiver a considerable amount of confusion in the back corners of the court. The ball is hit from center court into the right corner at head level and as close to the crack as possible. The ball then rebounds to the side wall across the court and, after bouncing, hits the side wall.

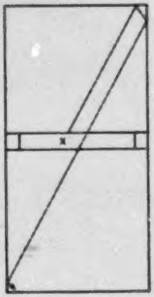

Figure 3.

Ideally, the serve will die in the back corner or take an unpredictable bounce along the back wall. As with the low drive, medium to three-quarters speed is needed for this fast-paced serve.

One disadvantage of the Z serve is that if it is hit short, it will ultimately result in an easy return for the receiver. If hit long, it will rebound off the back wall for a setup shot.

Half Lob Serve

This serve has been appropriately labeled the "garbage serve" because the purpose is simply to put the ball into play in a defensive manner. It is the perfect serve for a player who thrives on ceiling balls because the ceiling shot is the safest return on a half-lob serve. The ball is hit between waist and chest level to a point about 8 to 10 feet from the floor. The ball lands approximately 4 feet past the short line and must be hit at shoulder level by the receiver (Figure 4).

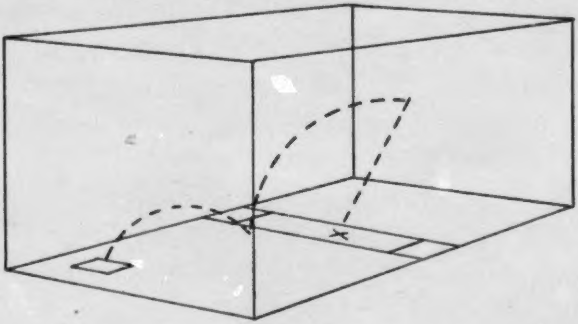

Figure 4.

The half lob serve is hit with less force than the low drive or Z serves and generates a slower-paced game. Unlike most racquetball shots, this serve is hit with a stiff wrist similar to a tennis stroke.

High-Lob Serve

This defensive serve is perfect for slowing down the receiver if he is playing a fast-paced game. It gives the server time to position for the next shot and forces the receiver to make his return from deep in the court. This serve must be hit much higher on the front wall than the half lob. It then comes down at a sharp angle, hits the left all high, takes a short bounce and dies in the back corner (Figure 5).

The motion of the arm consists of a lifting motion under the ball. Control of speed and perfect placement are most important for this shot.

Each of the aforementioned serves may be hit to either the left- or right-hand corner. As a general rule, two out of 10 serves should be hit to the receiver's forehand as a change of pace to keep him off guard.

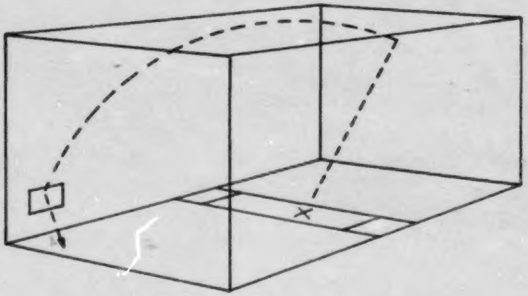

Figure 5.

Racquetball — Let's Keep It Safe

BARBARA ANDERSON

(Barbara Anderson's biography appears on page 138.)

As a sport racquetball has relatively minimal risk of serious injury. Several factors should be emphasized which can reduce the possibilities of any accidents occurring in classes or during recreational play.

Care of the courts and playing surface include such basics as regular cleaning, washing down and sweeping off leaves, dust and other stray objects. Extra balls should be removed from the playing surface to avoid stepping on loose balls. Lighting for indoor courts should be sufficient to illuminate the corners of the court and lights should be covered. Warm-ups, extra clothing, racquets and personal belongings should be stored away from the playing surface.

Equipment and Clothing

In terms of equipment, several factors should be considered. One of the most important safety devices is the wrist thong which is inserted into the handle of the racquet. This thong is required by the rules and is a necessity for ensuring the safety of all. Players should not be allowed to use racquets with defective or nonexistent thongs. The thong should be slipped over the wrist and twisted to assure that the racquet will not be lost if the grip slips from the hand. With perspiration on the grip, the possibility of throwing a racquet is reduced tremendously by the proper use of the wrist thong. Gloves, particularly for players who perspire heavily, may be recommended to absorb excess moisture. Grips should be kept in good repair by replacing torn rubber grips or the leather grip wrap (similar to tennis racquet grip replacements). Taping around the grip as a means of repair is not recommended since the tape is not absorbent.

Shoes and clothing should be comfortable. Shoes should provide good lateral support and have suitable stopping/starting qualities. Gum rubber soles are recommended for wood surfaces. Clothing should be absorbent and light in color to avoid visual loss of the ball against dark clothing.

Eye Injury

One of the greatest potential areas of injury is the eye, usually the result of an unpredictable shot or poor techniques of watching the opponent's hit. With inexperienced or beginning players, misjudging the ball's rebound off the wall or looking at the opponent while the ball is being played are common. The ball can ricochet off one's racquet or glance off the opponent's racquet also.

To prevent injury to the eye, players can use protective eye guards and should receive instruction regarding the techniques for watching the ball – how and when to look. A variety of eye goggles are available which are lightweight and constructed to insure that the ball will not come in contact with the eye if one is hit. The goggles require some adjustment – decreased peripheral vision is a common complaint. However, with playing experience adjustment to the goggles is easily made.

Playing Techniques

Playing techniques which can help decrease the potential of being hit in the face or eyes include looking at the opponent before the ball is being played, and turning back to the front wall at the time of actual contact. When the height and depth of the ball have been determined and the shot options available to the opponent appraised, the focus of attention and anticipation should shift back to the front wall as the ball is hit. When looking back at an opponent it is possible to protect the face by shielding it with the shoulder. In doubles, the server's partner can use the racquet to protect the face from being hit by the serve by merely holding the racquet between the face and the front wall. By doing so, the serve can be seen and the opponents observed simultaneously. Movement following the serve can also be gauged to avoid being hit from behind, i.e., moving out of the line of the service return.

To further avoid being hit from behind, players should learn to anticipate the possible flight of the ball on the opponent's return to the front wall. All players are responsible for knowing where the ball is, where the opponent is and where the ball will probably be traveling on the next return. Players must learn to safely look over the shoulder and to move from the opponent's path and out of the line of the opponent's intended shot. Learning early how and when to look, and following the spirit of the rules on unavoidable hinders will contribute to the safety of all players. By the same token, if an opponent has committed a hinder, the swing should be stopped if possible before contact with the ball. The possible hitting of an opponent, although the opponent is in a poor position, can be avoided, a hinder called, and thus a safer game conducted. Players should also be instructed to stop play as soon as a rally or point has been won so that they cease to hit the ball after an opponent has played a good shot or has beaten the player in a rally. Second bounce balls should not be hit.

First Aid

As with all injuries, immediate medical attention or first aid should be obtained, particularly with an eye injury, to decrease the possibility of complications. Signs of injury in the case of eye injuries are not always outwardly apparent. Sprains and bruises should be treated with normal first aid procedures.

Generally, few injuries occur in racquetball and many of these can be prevented by using common sense and taking into account the above mentioned safety precautions.

Start Your Own Racquetball Team

JOY KOPPEL

(Joy Koppel's biography appears on page 119.)

Because of the tremendous surge of interest in racquetball today, schools are beginning to develop programs which include not only instructional classes but also racquetball competition on an interscholastic level. Not surprisingly, students at the high school and college level are taking an active interest in this fast-paced game which provides immediate enjoyment and instant success.

Is there a future in racquetball at the college and high school levels? If so, what steps must be taken to promote this new sport?

Facilities

To develop any organized competition, the school must have available several 4-wall or 3-wall courts. The 1-wall court is not normally recommended, but may be used for serious competition. The acceptable IRA court size is 20 feet wide, 20 feet high and 40 feet long for the 4-wall and 20 feet wide, 16 feet high and 34 feet long for the 3-wall court.

Unfortunately these measurements are by no means standard from school to school. Because of limited funds or construction sights, the courts vary drastically in size especially at the high school level. This accounts for a great variety of racquetball techniques and subsequent problems in interscholastic competition.

Schools that do not have racquetball courts should be encouraged to provide them to meet the growing needs of the game.

Equipment

Metal racquets are considered superior, fiberglass good, and wood poor for racquets. Many companies provide discounts for racquets and balls, and the schools should take the opportunity to supply these to the students. If, however, the schools do not provide the equipment, students can purchase these supplies at little expense.

Establishing a Team

The following method was found highly successful in the establishment of the first racquetball team at California State University, Long Beach in the 1975-76 school year.

The first step was the designation of a faculty or student advisor and coach responsible for reserving facilities, setting up team practices twice a week, and general organization of the team.

Once the coach was chosen, a "challenge ladder" was established. Small, round interchangeable tags were placed on the ladder as a student became interested in competing. To move up the ladder, a student would challenge the player one or two places above her to a racquetball match and then report her score at a later time. This procedure continued throughout the fall 1975 semester and served to motivate interest and acquaint newcomers to the game.

Organizing a League

During the fall semester in which the challenge ladder was in effect, the first intercollegiate league was formed in the Los Angeles area. Several schools were contacted by phone and a meeting was held to discuss the future league. Tentative dates were set for the matches and the following rules were set up governing play:

1. Each school shall compete against each opponent twice -- one at home, once away.
2. The home team shall provide new balls for every match.
3. One week prior to each match, the visiting team shall notify the home team of the number of players who will compete.
4. Each match consists of 2 out of 3 games to 21 points.
5. Each school must provide an A team and *may* provide a B team. Each team consists of 4 singles and 2 doubles teams. A player can play either singles or doubles, not both.

The number of courts and length of their availability determined the number of matches played. With 6 courts for 2-3 hours, 8 singles and 4 doubles matches could be played. If the courts had adequate viewing, scorekeepers were used.

A record was kept of individual and team wins, losses and ties. At CSULB, a final league tournament was held in which athletes played singles in either the A or B division. The tourney marked the end of a successful first-year effort in the promotion of racquetball at the intercollegiate level.

Racquetball in High Schools

For schools with 3-wall or even 1-wall courts, the first step is to introduce racquetball into the curriculum. Once students begin to play, interest will grow at a tremendous rate.

There is no reason why the same team and league procedures cannot be applied at this level. With a little imagination, even 1-wall courts can be transformed into serious competitive facilities.

The major problem, of course, is funding. But money is a vital concern at every level. To promote this "instant success" sport, teachers and coaches must aid in establishing new teams and perpetuating competition for girls.

Glossary

HELEN WEISMEYER

Helen Weismeyer is currently teaching at Loma Linda University, Riverside Campus. She received her B.A. degree from Loma Linda University and her M.S. degree from the University of Southern California.

Ace. A legal serve untouched by the receiver.

Around-the wall-ball. A shot that first hits high on the side wall, then the front wall, then rebounds to the side from which it struck originally before hitting the floor.

Avoidable hinder. Avoidable interference, not necessarily intentional, of an opponent's clear shot resulting in loss of serve or point.

Back court. Court area behind the receiving line.

Backhand. Fundamental stroke hit across your body, starting on the side opposite the hand with which you play.

Backswing. The first step in any stroke, consisting of bringing the racquet into a ready position for beginning the swing.

Back wall shot. Hitting the ball after it has rebounded off the rear wall.

Blocking. Preventing the opponent from hitting the ball by moving some part of the body between opponent and ball (also called screening).

Ceiling ball. A ball that strikes both the ceiling and front wall and rebounds to deep court.

Ceiling serve. A serve that hits the ceiling after hitting the front wall. This is illegal and results in a fault.

Center court control. Maintaining position in center of court just back of the short line and forcing your opponent to retrieve in deep court.

Corner shot. Any shot that hits at or near the front right or left corner.

Court hinder. Interference by an obstacle that deflects the ball (a light fixture, fan, latch, etc.); point is replayed.

Cross-court serve. A serve that hits first the front wall, then the side wall, bounding to deep court on the side opposite the wall just struck.

Crotch serve. Serve that strikes the juncture of the front wall and the floor or ceiling; illegal serve.

Cutthroat. A game involving three players in which each player alternates playing against the other two and each player keeps a separate score.

Dead ball. Any ball out of play; a racquetball that does not bounce as high as normal.

Defensive shot. A shot which is made to keep the ball in play and out of an area where the opponent has an opportunity to kill the ball.

Die. A ball hitting low against a wall and rebounding with little or no bounce and is nearly impossible to return.

Doubles. A game between two teams; two players per team.

Down-the-line pass shot. A shot hit from near a side wall directly to the front wall and rebounding back along the same side wall.

Drive. A ball hit hard to the front wall so that it rebounds on a fairly straight line.

Drop shot. A softly hit ball aimed low into the front wall from front court.

Fault. Illegal serve or other infraction of serving rules.

Flat roll-out. A perfectly hit kill shot in which the ball hits the front wall so close to the floor that it rebounds with no bounce.

Foot fault. Illegal placement of your foot outside the service zone during serve.

Forehand. Fundamental stroke hit across your body from the same side as the hand with which you play.

Front court. Court area in front of the service line.

Front wall-side wall kill. A kill shot that hits first the front wall, then the side wall.

Garbage serve. A slow-paced, half lob serve which bounces twice before reaching the back wall.

Half-and-half. Definition of court responsibilities in doubles in which an imaginary line is drawn down the middle of the court.

Half-volley. Hitting the ball just after it bounces from the playing surface.

Hand-out. Loss of serve by first partner serving for his team in doubles.

Hinder. Unintentional and unavoidable interference with an opponent during play resulting in replay of point.

Information. Definition of court responsibilities in doubles: one player plays front court and his partner plays back court. Also called front and back.

Inning. A round of play in which both players complete serving.

IRA. International Racquetball Association, the governing body of racquetball.

Kill shot. An offensive shot hit low on the front wall, making a return impossible.

Lob serve. A high, soft service to the back court.

Long serve. Any serve that rebounds to the back wall before it strikes the floor. This is illegal and results in a fault. Two such serves in succession result in loss of service.

Match. Winning two out of three games.

Offensive position. Approximately center court; the most desirable spot for offensive play.

Pass shot. A ball hit to the side of an opponent and beyond the opponent's reach.

Rally. The time during which the ball is kept in play between the serve and the end of the point.

Reverse corner kill. A shot hit across the player's body and low into the side wall and then the front wall and dying near there.

Safety hinder. Stoppage of play when further play could result in injury.

Serve. The act of putting the ball in play.

Serve return. The receiver's first shot after the ball has been served.

Service box. The area 18 inches from the side wall, in which the nonserving member of a doubles team stands with the back to the wall while the *partner* serves.

Service line. The line parallel to and 5 feet in front of the short line.

Service zone. The court area where the server stands between the short line and the service line.

Setup. A shot that is easily returned resulting from an opponent's mistake or poor judgment.

Shadow-serve. A served ball passing so close to the server's body on the rebound that the receiver is unable to follow the ball.

Short service. A serve that fails to rebound beyond the short line. This serve is illegal, and two such serves in succession result in loss of service.

Side-out. Loss of service.

Side wall-front wall kill. A kill shot that hits the side wall and rebounds to the front wall.

Singles. Game of two players, one against the other.

Skip ball. Usually a low shot that hits the floor before it reaches the front wall.

Straight kill. A kill shot hit directly at the front wall.

Thong. Strap attached to the racquet and worn around the player's wrist. The strap must be fastened securely so the racquet will not fly out of control.

Three-wall serve. A serve that hits three walls on the fly; illegal serve.

Top spin. Rotation of the ball in a clockwise direction.

Undercut. Backspin put on the ball.

Volley. See *Rally.*

V pass shot. A passing shot in which the ball strikes first the front wall, then the side wall near the short line. This shot rebounds in a V fashion away from or behind your opponent; very effective in doubles.

Z ball. A shot that hits high on the front wall, the side wall, and rebounds to the other side wall before striking the floor.

Z serve. See cross-court serve.

Annotated Racquetball Reference Materials

CAROLYN LEWIS
San Jose State University
San Jose California

Books, Magazines and Pamphlets

Allsen, Philip and Witbeck, Alan. *Racketball/Paddleball.* Dubuque, IA: Wm. C. Brown, 1972.

Provides the beginning racquetball player with an easy-to-follow sequence of playing techniques. Book also contains an introduction to the game, fundamental equipment needs, the language and lore of the game, and a simplified rules summary.

"Ektelon Racquetball Clinic." Available from Ektelon, 7079 Mission Gorge Rd., San Diego, CA 92120.

A 10-page pamphlet containing a concise overview of the basic fundamentals of racquetball, including information on grip, strokes, serves, returns, rally shot selection, and general description of the game. An excellent reference source for students.

Racquetball Magazine. Available from the International Racquetball Association, P.O. Box 12490, Memphis, TN 38112.

This bimonthly magazine contains the latest information on the current happenings of the IRA, top players and tournaments, and instructional articles on skills and strategies by top-level players.

Lawrence, A. Paul. *Fundamentals of Racquetball.* San Diego, CA: Ektelon, Inc., 1973.

A brief, but complete manual that contains the basic fundamentals and rules that all new players are playing. Includes diagrams illustrating the fundamental shots of the game.

Leve, Chuck. *Inside Racquetball.* Chicago: Henry Regnery Co., 1973.

The official guide of the IRA discusses the winning techniques of national champions as well as presents a step-by-step, fully illustrated description of the type of racquet and ball to use, the proper grip and stroke, serves and serve returns, and offensive and defensive shots. Also included are the IRA's complete official rules.

National Racquetball Magazine. Available from the National Racquetball Club, Inc., 4101 Dempster St., Skokie, IL 60076.

A bimonthly magazine which is the official voice of the United States Racquetball Association (USRA). Includes articles on upcoming events, tournament results and instructional articles.

Official United States Racquetball Association and National Racquetball Club Rules. Available from the USRA 4101 Dempster St., Skokie, IL 60076.

Contains the official rules of play for the USRA.

Pfeifer, Gordy. *Lifetime Handball/Racquetball Reference Guidebook.* Available from Gordy Pfeifer, 359 Delmonte Ave., Tacoma, WA 98466.

A collection of instructional articles by the best authors in both games. Areas covered include injuries and treatments, exercises, conditioning and training aids, rules (4-wall, 1-wall, 3-wall, and Pro), refereeing techniques, national records, court club planning, and many pictures of the top names in both sports. A majority of articles cover handball techniques; however many may be applicable to racquetball. Book is designed so that pages may be removed and placed in a looseleaf binder and can be added to at any time.

Reznik, John W., ed. *Championship Racquetball.* Cornwall, NY: Leisure Press, 1976.

This book contains the latest collection of articles by top players and instructors. Articles cover all aspects of the game including: basic skills and techniques, hitting the ball, official IRA information, service, practice hints and drills, conditioning, etiquette, teaching the game and conducting a tournament or clinic.

Rules of Racquetball. Available from Ektelon, 7079 Mission Gorge Rd., San Diego, CA 92120.

A summary of the rules of racquetball covering 4-wall, 1-wall and 3-wall.

Stafford, Randy. *Racquetball: the Sport for Everyone,* 1974. Available from Randy Stafford, 4327 Walnut Grove, Memphis, TN 38117.

One of the latest racquetball books – includes such topics as basic fundamentals, advanced strategies, shot charts, court positioning, serving strategies, and the view of an entire tournament match. Well illustrated with diagrams and photographs.

Vockell, Ed. and Campbell, Otis. *Developing Racquetball Skills,* 1975. 111 pp. Available from Department 300, Box 2023, Hammond, IN 46323.

Covers such areas as the basic rules and equipment, how to develop skills, strategies, serves and the return of serves, offensive and defensive shots, safety guidelines, forming leagues, and a glossary of terms.

Organizations

The *International Racquetball Association (IRA)* is composed of over 8,000 members, the majority being from the United States.

Formed in 1968 as racquetball was just emerging as a sport, it has grown rapidly as the national headquarters where the promotion of racquetball is coordinated. Active with manufacturers and developers, the IRA has played an important part in the standardization of playing facilities and refinement of equipment.

The IRA promotes the game in a number of ways. One is through its bimonthly publication, *Racquetball Magazine*, which is distributed free to IRA members. Each year, state, regional and international tournaments are conducted by the IRA in six different singles and doubles divisions. The Association sponsors intercollegiate championships each spring and has recently organized a professional tour of prize money tournaments for the top players. The International office serves as a clearinghouse for racquetball information and activities.

For information concerning racquetball information and audiovisual aids, contact Tom McKie, executive director, International Racquetball Association, P.O. Box 12490, Memphis, TN 38112. (Phone (901/274-7325).

The *United States Racquetball Association (USRA)* is dedicated to the promotion and improvement of racquetball on the amateur level. It sponsors and hosts countless amateur events, including invitational, open, regional and national tournaments, clinics, and exhibitions. Membership in the USRA includes eligibility in USRA events, a subscription to the national *Racquetball Magazine*, and continual up-to-date information about clinics, exhibitions and racquetball products. For information, write to its national offices located at 4101 Dempster St., Skokie, IL 60076.

Films

Rollout by AMF Voit. A full, color and sound film of an actual doubles game was developed to help popularize the sport. The cast consists of four top touring pros: Charlie Blumfield, Steve Keeley, Steve Serot and Steve Strandemo. The film is available on a rental or purchase basis by contacting Richard G. Smith, AMF Voit, Inc., 3801 S. Harbor Blvd., Santa Ana, CA 92704.

NAGWS ORIENTEERING GUIDE COMMITTEE*
1975-76

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*The material for the 1976-78 *Guide* was prepared by the 1975-76 *Guide* Committee. The material for the 1978-80 *Guide* will be prepared by the 1976-78 *Guide* Committee.

Orienteering: An Introduction

MAXINE GRACE HUNTER

An orienteering teacher for the past five years at the Mont Alto Campus of The Pennsylvania State University, University Park, Maxine Grace Hunter has competed in orienteering competitions in the U.S., Canada and Sweden. She serves on both the Nomination Committee and the Education and Promotions Committee of the USOF.

Orienteering: The Word

"Orient . . . what?" is the reaction most often received from individuals hearing the term orienteering for the first time. The reaction is not all together unfounded since the word is a contrived term introduced into our vocabulary in 1946 by Bjorn Kjellstrom.[1]

Kjellstrom came to the United States from Sweden to introduce the Swedish national spirt, *orientering*. (Note that the Swedish word is spelled "tering" rather than "teering.") He soon discovered that the English language did not possess a counterpart to the Swedish word. The literal translation of *orientering* into English became the sport of orientation which was both awkward and nondescriptive. This translation of *orientering* was unacceptable to Kjellstrom and his compatriates. The dilemma was finally solved by anglicizing the Swedish word by adding another "e" to *orientering*. This resulted in the birth of the word, orienteering.[2]

Orienteering: The Sport

The sport of orienteering is a cross between land navigation games and a cross-country race. The first competition was held in Sweden in 1919, and from that time grew rapidly throughout Scandinavia. During the late 1940s and early 1950s, orienteering became increasingly popular in Europe. Although the sport was introduced to North America in 1946, it did not gather momentum until the mid-1960s.[3]

The official governing body for international competition is the International Orienteering Federation, organized in 1961. The

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[1] Vernon W. Humphrey and Theodore G. Stroup, *The U.S. Army Infantry School Orienteering Handbook* (Fort Benning, GA: United States Army Infantry School, 1971), p. 1.

[2] Bjorn Kjellstrom, "Orienteer vs. Orienteerer," *Orienteering, U.S.A.* 3, no. 2 (Summer 1975):21-22.

[3] Humphrey and Stroup, op. cit., pp. 1-3.

United States Orienteering Federation, formed in 1971, is the authorized sanctioning body for orienteering in this country.

There are nany different types of orienteering competitions, but the most popular form, and the type in which individual championships are decided is point-to-point (or cross-country) orienteering. In this event the competitor must navigate through the "wilderness" and locate red-orange and white markers placed on the features indicated on a topographic map. The orienteer is also required to visit the control features in numerical order. To aid navigation, a competitor may use a compass. The winner of the event is the competitor who finds all of the controls in the shortest amount of time.

Although there are other forms of orienteering, the purpose of these events remains to find the controls in the briefest time.

Preface To Rules Section

The Orienteering Rules were based on the official rules of the United States Orienteering Federation (USOF). With USOF's approval, the format of their rules was changed to enhance clarity.

Kenneth Ackerman of Southern Illinois University-Carbondale was chairperson of the rules committee for the NAGWS Orienteering Committee. Mr. Ackerman, an advanced course competitor, has been an active leader in orienteering workshops on national and state levels. In 1975 he was co-meet director for the U.S. Orienteering Championships.

RULES OF ORIENTEERING

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- Section 2. Purpose of Orienteering
- Section 3. Season
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- Section 3. Course Setting
- Section 4. Pre-Meet Information
- Section 5. Competition Map
- Section 6. The Start
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- Section 1. Rules of Fair Play

VI. Problems, Disqualifications and Protests

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- Section 2. Disqualifications
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I. INTRODUCTION

Section 1. Definition of Orienteering

Orienteering is land navigation by the use of a topographical map and compass. In competitive orienteering, the participant locates a specified number of control points shown on the map in the shortest possible time. The site for an orienteering meet is, ideally, on terrain which is unfamiliar to all competitors.

Section 2. Purpose of Orienteering Competition

Orienteering competition should challenge the participant both mentally and physically. A primary concern in planning the course is to emphasize the navigation between controls, striking a balance between orienteering technique and running ability.

Section 3. Season

The orienteering season is from September 1 to August 31.

Section 4. Types of Competition

The usual form of competition is cross-country (point-to-point) orienteering on foot. However, competition may also be conducted for score, line or route orienteering, and may be by other forms of travel – i.e., bicycle, ski, horseback, snowshoe and canoe.

Individual Competition – The orienteer must solve all the problems of his course by himself.

Team Competition – Several orienteers (three to four) navigate the course individually and their times are added together to constitute the team's performance. Usually the three best times of a four-member team are used as the team's score.

Relay Competition – Each team member navigates a particular section of the entire course.

Wayfarers – In this noncompetitive type of orienteering the problems of the course may be solved individually or in groups without the pressure of time.

II. EQUIPMENT AND FACILITY NEEDS

Section 1. Terrain

a. The competition terrain is best when the area is completely, or nearly completely, wooded, and the topography is such that there are many details of land forms without severe changes in elevation.

b. For championship meets, the area should not have been previously used for an orienteering competition.

Section 2. Map

a. The map must give a detailed representation of the topography, hydrography, vegetation, and cultural features. Difficult or hazardous areas must be clearly marked on the map.

b. The scale for the map may be either 1:15000, 1:20000 or 1:24000. The scale decided on should be the one that best depicts the details of the area.

c. The contour interval of the map may vary from 10 feet (3m) to 20 feet (6m).

d. Colors of the map

Topography - brown
Hydrography - blue
Cultural - black

Vegetation:
Clearings – yellow
Wooded – white

e. The map shall contain this information:
(1) North shall be clearly shown.
(2) Meridian lines should be drawn to magnetic north. If the meridians are not drawn to magnetic north, the local declination must be stated in the map legend.
(3) Symbols must conform to the International Orienteering Federation (IOF) standards. In the event that other symbols are needed, a legend must appear in the pre-race instructions clearly showing the variations from IOF standards.
(4) Out-of-bounds areas, which are those areas that the Meet Director was unable to get permission to use, must be marked with oblique hatching.
(5) Important crossing points, such as steps up a slope, tunnels under rock or railways, must be clearly shown.

Section 3. Control Markers

a. Control markers must be of two colors, red-orange and white.

b. The control marker shall consist of three rectangular panels 30 x 30 cm. Each panel shall be divided diagonally with the upper half white and the lower half red-orange.

c. Each control marker must be identified by marking a code number (letter) on each panel. The line of the code number (letter) is 8-10 mm. thick and 8-10 cm. high.

II. Equipment and Facility Needs

Section 4. Punches or Stamps

a. Stamps or punches should be supplied in sufficient numbers at each control. They should be placed not more than .5 M from the control marker.

Section 5. Start Area

a. The start area consists of a roped grid, two squares or more in depth and five squares in length (one for each course). *Note:* See Figure 1.

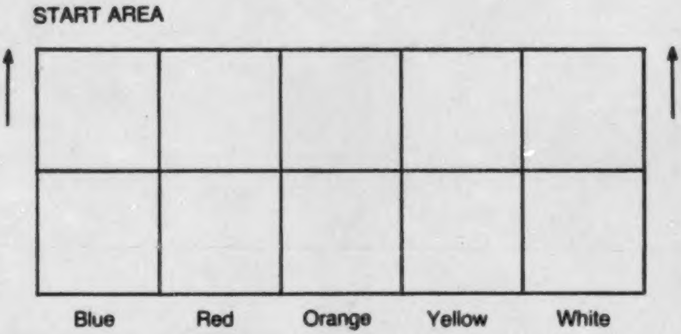

Figure 1.

b. Also needed are timing device, flip numbers, whistle and a board showing the starting times of the participants.

Section 6. Finish Area

a. The finish area shall have a chute into the finish with a banner over the finish line.

b. The route from the last control marker to the finish line must be streamered. *Note:* See Figure 2.

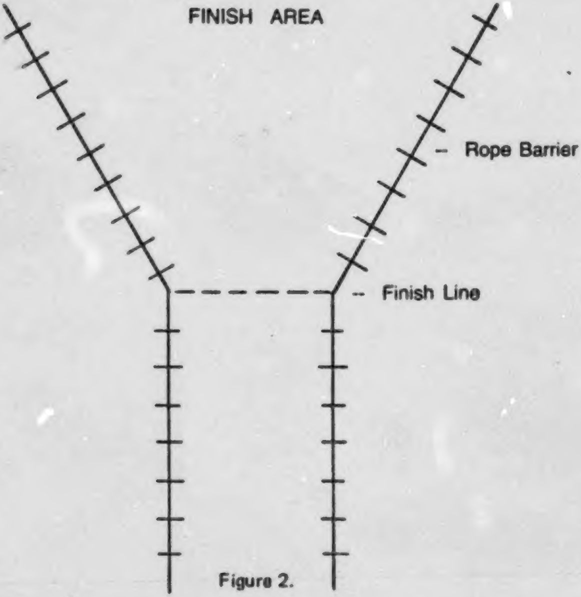

Figure 2.

III. MEET PERSONNEL

Section 1. Meet Director

a. The Meet Director is responsible for coordinating all of the activities involved with the meet. Primarily, he oversees the work of the following committees appointed by him:

(1) Publicity
(2) Map and Course Setting
(3) Registration
(4) Start Area
(5) Finish Area
(6) Site Organization
(7) Food, First Aid, and Other Support Facilities
(8) Awards

III. Meet Personnel

Section 2. Course Setter

a. The course setter is responsible for the design of all courses as well as the physical placement of the control markers in the field. The course setter may appoint a committee to help in control marker placement. The course setter should have a thorough understanding of the principles of course setting as well as sufficient orienteering skills.

Section 3. Jury

a. The Meet Director shall appoint a Jury of at least three members. One member must represent the organizers; the others may be appointed from the participants.

b. The Jury's responsibilities are:
   (1) handle all protests
   (2) deal with other questions which may arise in connection with the competition.

c. The decision of the Jury is final.

Section 4. Timer and Scorer

a. The timer is stationed at the finish line. He is responsible for calling out the time as a runner crosses the finish line.

b. The scorer is stationed at the finish line and records on the official scoresheet the time given by the timer. The score of a competitor is derived as follows:
   (1) A competitor's score is obtained by subtracting his start time from his finish time. The difference between the two is the competitor's score.
   (2) The scorer checks the competitor's scorecard to see if the competitor has correctly punched in at all of the controls. If he has not, the scorer will record the competitor's score as a D.Q. (disqualification).
   (3) For competitors who do not finish the course, the score will be recorded as a D.N.F. (did not finish).
   (4) For competitors who finish the course but go beyond the specified time limit, the score shall be recorded as O.T. (overtime).

Section 5. Course Vetter

a. The USOF will appoint a vetter for each meet sanctioned by the Federation as an "A" meet. Vetting is defined as ensuring the accurate physical placement of each control on all courses. The vetter should be a highly skilled orienteer.

IV. THE MEET

Section 1. Classes of Competition, Course Length Estimated Winner's Time

a. H – Male D – Female

Age	Course Color	Distance (kilometers)	Time For Winner (minutes)
D-14 A	Yellow	3.5 – 4.5	40
D 15-18 B	Yellow	3.5 – 4.5	40
D 15-18 E	Orange	3.5 – 4.5	50
D 19-B	Orange	3.5 – 4.5	50
D 19-E	Red	5 - 7	60
D 35-B	Yellow	3.5 – 4.5	40
D 35-A	Orange	3.5 – 4.5	50
D 43-A	Orange	3.5 – 4.5	50
H 14 A	Yellow	3.5 – 4.5	40
H 15-18 B	Yellow	3.5 – 4.5	40
H 15-18 A	Orange	3.5 – 4.5	50
H 19-20 B	Orange	3.5 – 4.5	50
H 19-20 E	Red	5 – 7	60
H 21-C	Orange	3.5 – 4.5	50
H 21-B	Red	5 – 7	60
H 21-E	Blue	7 – 12	60-80
H 35-B	Yellow	3.5 – 4.5	40
H 35-A	Red	5 – 7	60
H 50-B	Yellow	3.5 – 4.5	40
H 50-A	Orange	3.5 – 4.5	50
H & D-17	White	less than 3	30
H & D-18	White	less than 3	30
Wayfarers	White	less than 3	Non-competitive

Levels of Competition

C – Beginner
B – Standard
A – Advanced
E – Elite

b. United States Championship Classes
Men – H 21 – E
Women – D 19 – E
Jr. Men– H 19 – 20 E
Jr. Women – D 15 – 18 E
Intercollegiate Champion – Men – Red Course
Intercollegiate Champion – Woman – Red Course

c. *Age.* The determining date for age is August 31 of each year (i.e., a competitor is classed throughout the season September 1 to August 31 according to the age he/she will be on August 31 at the end of that season).

If a competitor wants to compete in an age class older than his/her present age, he/she must apply for special permission from the chairman of the Technical Committee.

d. *Courses.* At orienteering meets sanctioned by the USOF, five courses shall be offered:

Course	Winner's Time (approximate)	Course Length (approximate)
White	30 min.	3 km. – or less
Yellow	40 min.	3.5 – 4.5 km.
Orange*	50 min.	3.5 – 4.5 km.
Red	60 min.	5 – 7 km.
Blue **	60-80 min.	7 – 12 km.

*The orange course differs from the yellow in that the controls require more expertise, thus making the navigation longer and more difficult between controls.

**The Blue Course is the most difficult and requires great expertise in navigation and tremendous physical ability.

e. *Combination of Classes.* An organizer may combine classes when the anticipated turnout for the meet is small. The organizer must clearly state which classes have been combined.

Section 2. The Competitor

a. The competitor is responsible for furnishing his own equipment, except for the map. His uniform may be any type as long as it complies with the regulation that tne Meet Director stipulates.

b. The number of competitors on each course is unlimited.

c. During the competition, the competitor:
  (1) will visit the controls in the proper sequence.
  (2) observe the rules of fair play.

Section 3. Course Setting

a. The IOF "Standard for 0-Courses" should be used as a general guide for sanctioned meets.

b. Use of streamers, design, and number of controls:
  (1) When a section of the course is marked with streamers, i.e., in hazardous areas, the competitor must follow the streamers.
  (2) The competitor must visit the controls in correct order, ascending numerically. If, in the course design, there is an advantage to taking the controls out of order, the organizer must take appropriate measures to prevent this.
  (3) When feasible, use separate controls for different classes of competition.
  (4) Generally, set one control per kilometer, plus 2 or 3 extra. On white and yellow courses, *more* controls may be used.

c. Positioning of the control markers should be as follows:
  (1) Features which are clearly defined, distinct from the surrounding terrain, and which are shown on the map, should be selected as control sites.
  (2) The marker should be clearly visible when the participant arrives at the described point. (*Note:* When positioning the marker, place the flag higher for beginners and novice classes than for the advanced and elite classes. Generally, waist high or higher for the former and knee high or lower for the latter.)

d. If there is hazardous terrain in the competition area, the organizer shall:
  (1) select control locations which avoid such terrain.
  (2) inform the participants of the hazard before the competition begins.
  (3) route the competitors around the hazard by use of streamers, or develop special legs in the course design which lead the competitors away from the danger. (*Note:* Yellow and red streamers denote danger.)
  (4) Use a special control at a safe point of crossing deep water.

IV. The Meet

Section 4. Pre-Meet Information

- a. Prior to the start, the competitor should be given:
  - (1) a description of the control which gives the precise location of the marker (i.e., the knoll, the stream junction, etc.)
  - (2) the code number or letter of the marker so the competitor knows when he has located the correct control.
  - (3) a safety bearing and the name of a town close to the finish area.

Section 5. Competition Map

- a. A pre-marked map should include in a red or purple color:
  - (1) a start triangle (7mm per side)
    - (a) Position of the start triangle: when the course is premarked on the map, the triangle marks the exact position of start location.
  - (2) control circles (5-6 mm diameter)
  - (3) finish-double circles (5 and 7 mm diameter).
    - (a) The center of the circle, although not marked, denotes the position of the control marker.
    - (b) The triangle and circles should be joined by straight solid or dash lines which do not obscure any vital information on the map.
  - (4) Controls should be numbered on the map in the order they are to be visited with the figures oriented to North.
  - (5) Streamer trails are marked by dash lines.
- b. If master maps are used, the following rules should be observed:
  - (1) The start triangle marks the exact location of the master map area.
  - (2) All master maps of the same course will be marked identically and, except for the control information, will be the same as each competitor's map.
  - (3) The minimum number of master maps will be determined by the start interval in each course.
    - (a) 6 master maps for 1-minute intervals
    - (b) 4 master maps for 2-minute intervals
    - (c) 2 master maps for 3-minute intervals
  - (4) Changes cannot be made on the master maps; rather, new master maps will be prepared.

(5) The master map area will be concealed from the view of all spectators and from all competitors who have not yet started.

Section 6. The Start

a. Each participant is issued a start time.
b. The start should be placed and oriented so that waiting participants cannot see those who have already started.
c. If a pre-marked map is used, the participant should receive the map 2 minutes before start time if on a white, yellow or orange course and 1 minute before start on the red or blue course.
d. If a master map is used, the participant will have to mark his own course on the map. He should receive his map at least 5 minutes before his start time. The controls shall be copied from the master map immediately after the time start.
e. Individual starts are required in all competitions except relays. With an individual start there must be a time interval of at least 1 minute between participants with the same first control. Elite classes should have a 3-minute interval in championship meets.
f. A mass start may be used to begin a relay.

Section 7. Time Limit

a. In championship meets, the time limit shall be not less than three hours for each participant.

Section 8. The Finish

a. A finish banner shall be hung over the finish line and all participants must pass under it.
b. As a participant crosses the finish line, the time is taken to the nearest second. If more than one participant has the same lapsed time, they are given the same placing results and listed in order of start.

Section 9. Results

a. The organizer shall display provisional results as they become available – at the latest, one hour after the close of the finish.
b. The number of starters and finishers must be stated in the results.

V. FAIR PLAY

Section 1. Rules of Fair Play

a. The rules of fair play will govern the competition and all participants must observe these rules.
   (1) A participant must not seek to obtain unfair advantage over the field of entries by:
      (a) collaborating with other participants.
      (b) "hanging on" to another participant in order to benefit from his skill.
      (c) going to the controls out of order.
      (d) attempting to get information from the officials, leaders, spectators or participants.
   (2) A participant must not reenter the competition area after crossing the finish line without special permission from the Meet Director.

VI. PROBLEMS, DISQUALIFICATIONS AND PROTESTS

Section 1. Voided Course

a. A course will be voided when a control marker is missing or seriously misplaced. Under these circumstances, differences in competitors' lapsed time reflect only the differences in their starting order, and the fact that after searching in vain, some competitors retired sooner than others. This concept will govern official decisions to be made in the following situations:
   (1) If less than half of the total competitors running a course are able to complete the entire course while all the control markers were in place, then the Meet Director will void the course.
   (2) If more than half of the total competitors running a course are able to complete the entire course while all control markers were in place, then the Meet Director will convene the Protest Committee (Jury). The Jury will vote on whether to allow times and places to be counted for those competitors who were able to complete the entire course while all control markers were in place, or to void the course.
   (3) If a control marker was incorrectly placed on a different major terrain feature other than the one indicated, as shown on the master map or printed on

the competitors' map, then the Meet Director will void the course.

(4) If a control marker was incorrectly placed, but close to the terrain feature indicated, as shown on the master map or printed map, then the Meet Director will convene the Jury to vote on whether the error was minor or serious. If the Jury decides that the error was serious, then the Meet Director will void the course.

(5) When the Meet Director determines that one or more master maps were in error, then he will convene the Jury to vote on whether the error was minor or serious. If the Jury decides that the error was serious, then the Meet Director will void the course.

Section 2. Disqualifications

a. A competitor may be disqualified from the competition for breaking any of the rules of fair play, or other unsportsmanlike conduct.

b. A competitor may also be disqualified if:
   (1) he does not mark his card at each control.
   (2) he has an incorrect mark on his scorecard or has more than one punch mark in any square of the scorecard.
   (3) he does not visit the controls in proper order.
   (4) he uses any map other than the competition map while competing.
   (5) he uses aids such as: transport, electronic apparatus, radios, walkie-talkies or altimeters.
   (6) he exceeds the specified time limit for his course.
   (7) the Meet Director can prove that a competitor removed a control marker or punch from its original position or caused a control marker to be more difficult to see than it was when he arrived at the control. A competitor will, however, be allowed to replace to its original or logical position a control marker or punch which has obviously fallen.

Section 3. Protests

a. Protests against the Meet Director or an individual competitor must be submitted in writing to the meet organizers within one-half hour after the finish closes.

b. Each protest is dealt with by the Jury.

c. All decisions of the Jury are final.

Score Orienteering: The Answer To Your Problems

LINDA K. ROWE

Linda Rowe is a member of the USOF and has served on the Federation's Competition Committee for the past year, 1975-1976. She is also a member of the NAGWS Orienteering Committee. At Lorain Community College, Elyria, Ohio, where she is currently teaching, she initiated the orienteering program.

Not enough time? Too many students? Too much open terrain? Difficulty in challenging all students? Not enough experience? Maybe the use of score orienteering will help you solve these problems.

Let's Score

Score orienteering[1] is the type of orienteering where each control point has a certain point value. The controls, 10 to 20 in number, are scattered over the area in which the event is going to take place. Controls in the more difficult spots should range in value from 25-50 points while the easier, more accessible controls should range in value from 5-10 points. Thus, the more inaccessible the control, the higher the point value. Generally, more controls should be placed in the area than can possibly be visited within the stated time limit.

Unlike cross-country orienteering, the competitor need not visit the controls in any particular sequence. The object is for the individual to determine which of the controls he or she can visit within the allotted time and be able to amass the greatest total in points. The person with the greatest number of points is the winner.

It is important that the individual understands the time limit involved because points are deducted for lateness. For example, for every 30 seconds over the limit, one point can be deducted from the individual's total score. After 5 or 10 minutes, the penalty can become as severe as -10 points per minute.

When competing in a score meet, the individual should be given a scorecard containing the following information: the designation number of each control bag, the control descriptions, and the point value for each control.

Now you're ready to score!

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[1] John Disley, *Orienteering* (Harrisburg, PA: Stackpole Books, 1973), pp. 78-79.

Not Enough Time?

Many cross-country orienteering events need at least two hours of running time, but a score meet can be adapted to the allotted class time. In fact, a score meet can be run in less than an hour. Give all the instructions and explanations in the preceding class. Then simply lay out the course in a small area – perhaps a one-mile square. Place the farthest controls 15 to 20 minutes away from the start. Randomly place the rest of the controls throughout the area.

For an hour class, a time limit of 40 minutes could be used. Stress to the students that they should use the entire 40 minutes. Ten controls should be a sufficient challenge in this situation.

Too Many Students and Too Much Open Terrain?

Score orienteering lends itself quite well to the mass start. Since each student decides which controls and in what order he or she will visit them, follow-the-leader should be eliminated. Theoretically, on the signal "Go" everyone will scatter in different directions.

If the area you are using is not abundant with wooded terrain, such as a school ground or city park, score orienteering can still be conducted effectively. Although the open land allows students to observe other students in their search for the controls, the desire to follow should be kept to a minimum since each orienteerer has his or her own goal in mind.[3]

Difficulty in Challenging All Students?

As with most classes, the teacher will find that some students excel while others have difficulty with even the easiest courses. The score event, with both difficult and easy controls, may therefore meet the abilities of all class members.[3]

Not Enough Experience?

Score orienteering is the easiest to plan, for the teacher does not have to consider two or three route choices between each control. This does not eliminate decision making by the student, however. Route choice problems are still involved because the students must determine which routes will take them by the most controls and still get them back to the finish line within the time limit.

The Answer To Your Problems?

As you can see, score orienteering may be the answer to your problems of time, space and experience. It is not suggested that the score meet substitute for cross-country orienteering, but it can be used to add variety and interest to your orienteering program.

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[3] Ibid.

[3] Ibid.

Course Setting: By and For the Novice

MAXINE GRACE HUNTER

(Maxine Grace Hunter's biography appears on page 158.)

Course setting is one of the most challenging aspects of orienteering. It is often thought that only the most experienced orienteers should attempt course setting, but this is not necessarily true. Although it may take more time, thought and worry, inexperienced orienteering teachers can set courses for their classes that are challenging, educational and fun.

The chief problems faced by the teacher-course setter are (1) placing control markers correctly, (2) designing a course for the novice and (3) teaching basic orienteering strategies in relation to course design.

Correct Placement

There are no available formulae to assist the novice orienteering teacher in the correct placement of control markers. The following suggestions, however, may prove beneficial.

First, study carefully the topographic map of the area to be used. Note all prominent features such as buildings, roads, trails, streams, lakes, ponds and knolls.

Next, visit the area and with map and compass, locate in the field the features you observed on the map. As elevation features are the most difficult for the beginner to recognize, study these in relationship to man-made features and/or obvious water features. It is essential to know your starting position. By knowing your point of departure and your direction of travel, it becomes easier to judge the location of the different features or landmarks as you come upon them.

During your walk, if you are uncertain as to the feature you have located, you can check it (1) by relating your location to other prominent landmarks and (2) by precision compass reading and pace-counting. In Figure 1, the path junction and the stream junction were used to check the position of hill "A." Although it takes more time to move from feature to feature checking location, it is the only way that you, the novice, can be assured that you have located the correct position.

Last, take note of discrepancies in the map. On the typical USGS map, many small features needed for orienteering (such as boulders, cliffs, fences, ditches, depressions and trails) will not appear. New buildings, roads and pipelines may also be missing. A corollary problem is features plotted on the map that no longer exist in the field. These situations can be particularly confusing to novice orienteers, and they should be informed of these discrepancies.

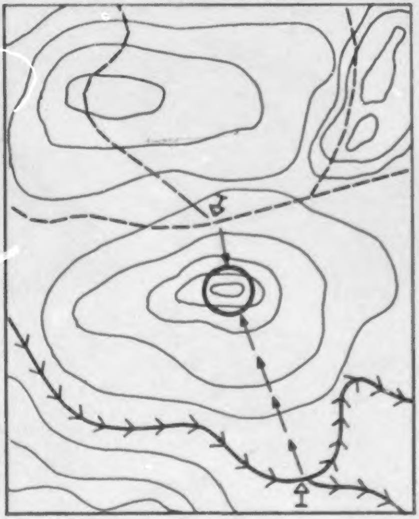

Figure 1.

Course Design

After familiarizing yourself with the area, you are ready to design your course. Beginning courses should be designed to introduce a great variety of map features. Features selected should be prominent and easily recognized in the field. Road junctions, path junctions, stream junctions, ponds, lakes, pipelines, clearings, field edges, and buildings are all good control locations. If elevation features (such as knolls and depressions) are used, they should be outstanding, and, if possible, located near one of the above type of landmarks.[1]

On the novice course, route selection problems are minimal during the first three or four lessons. The course should be designed so that the novice uses paths, field edges, roads or pipelines 80-90 percent of the time.[2] (See Figure 2.)

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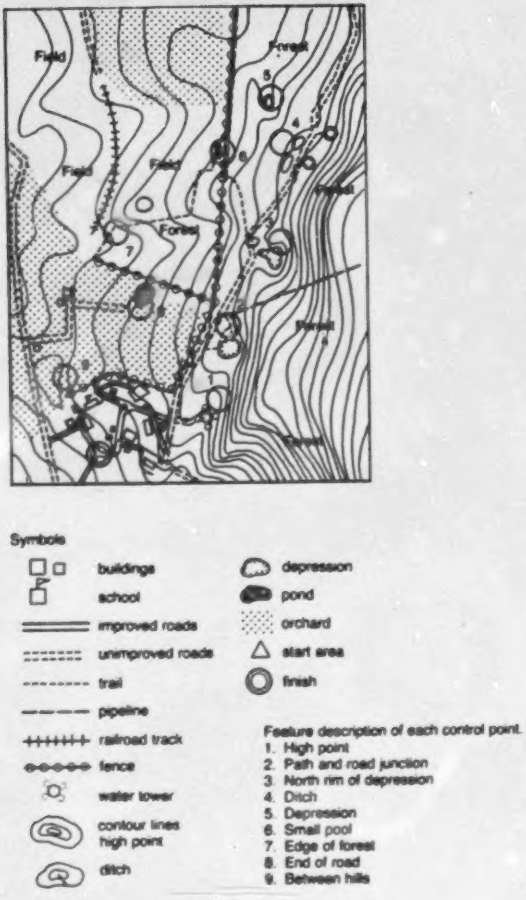
[1] Juri Peepre, "The Novice," *Orienteering Canada* 2, no. 2 (Aug. 1974): 2.

[2] Ibid., p. 3.


Field
Forest
Field
Field
Forest
Forest
Forest
Forest
1
2
3
4
5
6
7
8
9
Symbols
buildings
school
improved roads
unimproved roads
trail
pipeline
railroad track
fence
water tower
contour lines
high point
ditch
depression
pond
orchard
start area
finish

Feature description of each control point.
1. High point
2. Path and road junction
3. North rim of depression
4. Ditch
5. Depression
6. Small pool
7. Edge of forest
8. End of road
9. Between hills

Figure 2. Typical novice course.

Student safety should also be considered. The course should not be structured to tempt students to swim a lake or river, scale up or down a cliff, or cross a busy highway. To avoid this, use controls to lead them to safe crossing areas and away from dangerous places.

Although route selection problems should not be a part of beginning courses, do not ruin the excitement of the activity by placing controls in such a manner that a "dog-leg" is created. A dog-leg develops when the obvious approach to the control is basically the same as the departure to the next control (Figure 3). To avoid this, another control should be used, even if it is placed close to the previous control (Figure 4).[3]

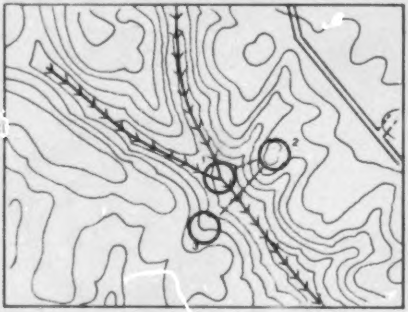
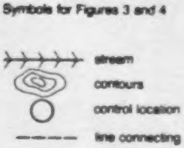


Figure 3. Dog-leg.


Symbols for Figures 3 and 4
stream
contours
control location
line connecting

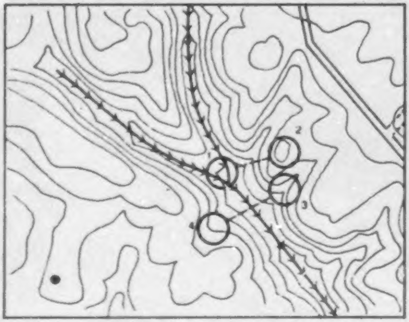


Figure 4. Corrected dog-leg.

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[3] John Disley, *Orienteering* (Harrisburg, PA: Stackpole Books, 1973), p. 114.

The last considerations of course design are the number of controls to be used and their placement in the field. Depending on the time available, 6 to 10 controls can be used. They should be placed at least 150 meters apart, with the maximum distance 500 meters, and high enough so that the orienteer can see them from any direction of approach.

Orienteering Strategies and Course Design

As the class advances, route selection problems can be incorporated into course design. If structured properly, the novice should be able to make route decisions concerning the following situations and techniques: path vs. direct route, over-or-around problems, aiming-off and attack points.

Direct route versus path problems can be structured by placing the controls so that a path parallels the direct route to the control. Usually, the path is or appears to involve the longer distance to the control. (Note, for example, in Figure 2 that the path vs. direct route situation exists between controls 2 and 3.) Even if both routes are equal in difficulty, this type of navigation problem forces the novice to think and to make a decision.

Closely resembling the direct route problem is the over-or-around problem. However, instead of making the orienteers decide whether they will take a path or go in a beeline to the control, they must decide whether to climb up and over the obstacle or to navigate around it. To construct this problem, locate control points on both sides of a hill or group of hills. In Figure 5, points 3 and 4 illustrate this problem. The arrows indicate two possible routes around the

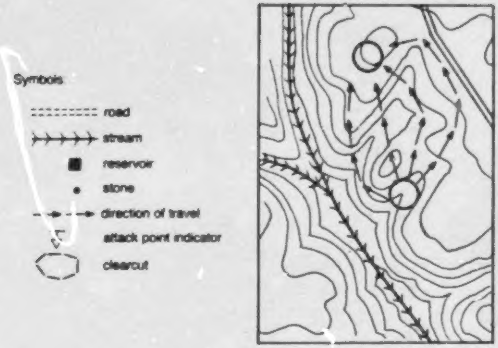

Figure 5.

steep slope. The third route is to climb the hill to the control. Figure 6 depicts this situation in terrain cut deep with drainage systems.

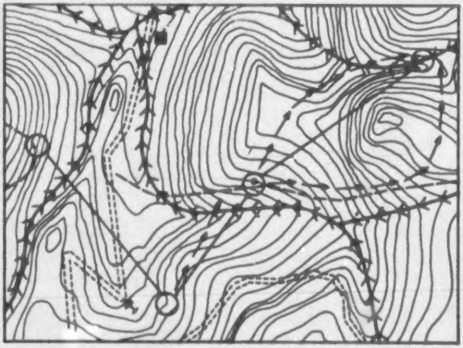

Figure 6. Over or Around: Control A is located in a drainage. Control B is on the west side of knoll. A hill is located between the drainage and the knoll. Arrows indicate the possible routes from A to B.

Aiming-off is a technique used to locate a marker on a linear feature by taking a bearing to the left or right of the control marker. By placing a control on a linear feature, aiming-off techniques can be practiced. This can be established by placing the control on a path, road, stream, pipeline or ridge that is perpendicular to the previous control. In Figure 5, aiming-off was used to locate control 3. By taking a bearing to the left of the marker, the student would simply turn right upon reaching the path and move up the hill to the marker.

Using attack points (i.e., prominent features located near the control marker) is a technique which can change an easy course into a challenge. With attack points, the marker can be placed in less obvious positions. As shown in Figure 5, the horseshoe bend in the road would be an easy control site; instead, it becomes a very good attack point for control 2. Setting courses in this fashion adds interest for the better orienteering students.

Conclusion

Novice orienteers can set courses for other novices if they prepare themselves for the task. The teacher/novice course-setter is best able to judge the abilities of both her class and herself, and she should design her different orienteering events with those abilities in mind.

Simple Mapping Techniques for the Teacher

COLIN KIRK

Colin Kirk is executive director of the Quebec Orienteering Association. First introduced to orienteering in 1968, he developed an ardent enthusiasm for the sport and in 1971 became president of the Quebec Orienteering Association. In 1974 he became chairperson of the Canadian Orienteering Map Committee and a year later was elected to the International Orienteering Federation Map Committee.

You have just returned from an orienteering workshop. Your arms are laden with books on compass use. You can't wait to introduct your students to the joys of navigating their way using a map and compass.

However, there is a problem: you don't have a map! And without a map the navigational aspect of orienteering is lost. In fact, without a map there can be no orienteering.[1]

How can you obtain a map and how much will it cost? Can you make a map? How do you go about making it and how much time will it take?

These questions are no doubt familiar to anyone who has thought of introducing orienteering in an area that does not possess a specially prepared orienteering map. The purpose of this article is to outline the procedures that you, the teacher, can use to prepare a more adequate orienteering map for class use.

First, you must ask yourself several questions:

- Who will be using the map and for what purposes? It will probably be used by a school, scout, or youth group. It also may be used to conduct a clinic on map and compass use or perhaps to teach a small introductory orienteering event.
- Is there a suitable area near my location? When looking for an area, the following factors should be considered:
  1. Try to locate an area such as a state park or some type of public land. This type of area usually has good access roads, parking facilities, washrooms, etc., all of which make for a more pleasant introductory experience for newcomers.
  2. Landowner Permission. If state parks or public land is used, permission need only be asked from one authority. If the land is privately owned by several individuals, permission must be requested from each owner.

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[1] An orienteering (O) map differs from a regular topographic map in that more detail is required on an O map (e.g., boulders, cliffs, small trails).

3. Try to use an area that will be surrounded by easily identifiable boundaries. This keeps the group in a relatively enclosed area. It also gives a feeling of confidence and well-being to novices if they know they can't get lost.
4. Try to locate an area near where you live to reduce traveling time and make it easier to work on the map.

Once you have decided on your location, you must ask yourself these two important questions:

- How much time am I prepared to put into the project?
- How much money do I have to spend?

We will assume that two or three days and evenings, plus a few dollars for supplies, etc. is what you are prepared to invest. Now the key question, "How do I go about making the map? "

Step 1: Obtaining Topographic Map

Obtain a copy of the topographic map of the area in which you are interested from the U.S. Geological Survey Department.

To purchase maps of areas east of Mississippi River, write to:

Distribution Section
U.S. Geological Survey
Washington, DC 20242

Areas west of the Mississippi River:

Distribution Section
U.S. Geological Survey
Denver Federal Center
Denver, CO 80225

From these two addresses you can also get a Topographic Map Index Circular from which you can obtain the code reference numbers of the map you are going to use.

Most U.S. topographic maps are produced in a map scale of 1:24000 with 20-ft. contours. In some areas you will be able to obtain maps with 10-ft. contours. Either of these is suitable although the 10-ft. interval is better. In some areas only maps with a scale of 1:62500 and 50-ft. contours are available. These maps are difficult to work with because the 50-ft. contours leave out too much detail and make it hard to produce an accurate map.

Step 2: Outline of Area on Topographic Map

The typical USGS map of 1:24000 covers far more area than is needed for orienteering. Therefore, you must decide what portion of the map you will be using. Also, to improve your map, the portion used needs to be 2.4 times larger than it is. Because it would be unreasonable to enlarge the entire map, you must decide how much area you will need from the 1:24000 scale map. In making this decision, consider these factors:

a. Your final printed map should be a size that can be handled easily in the field; either 8½ in. x 11 in. or 11 in. x 14 in. is recommended.
b. The scale of the final map should be 1:10,000. This scale is much easier for novices to read and is a more adequate size for making map corrections.
c. If possible, there should be enough space in the margin to contain map symbols, map scale and contour interval.

After you have made your decisions, outline the area you wish to enlarge, clearly marking the area boundaries. Note the size you wish the enlargement to be. For example, if the "topo" map is 1:24000 and you want the finished map to be 1:10,000, then mark that it must be enlarged 2.4 times or indicate the enlarged size in inches. (See Figure 1.) Also, include with the portion to be enlarged the scale chart from the bottom of your original "topo" Any commercial photocopy company can do the enlargements at a low cost.

Step 3: Tracing from Topographic Enlargement

Securely fasten the enlarged map copy onto a drawing board or table. Next, securely fasten a sheet of polyester film (mylar), 4 mil thick, on top of the map copy. Now trace all of the contours, roads and other map details onto the mylar. It is best to use technical drawing pens, size 0.18 or 0.2. Pens do not wear down like pencils and ink gives a clearer line. When this step is completed, you will have a sheet of mylar with all of the map detail copied onto it.

Note: Do not copy any map grid lines, index contours or other written materials, such as names of roads or towns.

Step 4: Magnetic North Meridians

Magnetic north meridians should be placed on the corrected map. The regular USGS map is produced with true north at the top. Compasses, however, work to magnetic north. Adding magnetic north lines to your orienteering map makes it unnecessary to allow for the magnetic declination whenever a compass reading is taken from the map.

To draw the magnetic north lines on your map, return to your original "topo." Take note of the magnetic declination indicated on the diagram in the bottom left margin. Using this information, draw a single Magnetic North – South Meridian line by placing the edge of a compass or ruler on top of the Magnetic North line on the "topo" map and simply draw a line. Transfer this line to your mylar sheet. Once this is done, draw several other parallel lines about two inches apart. This will give you a series of Magnetic Meridian lines on your mylar sheet.

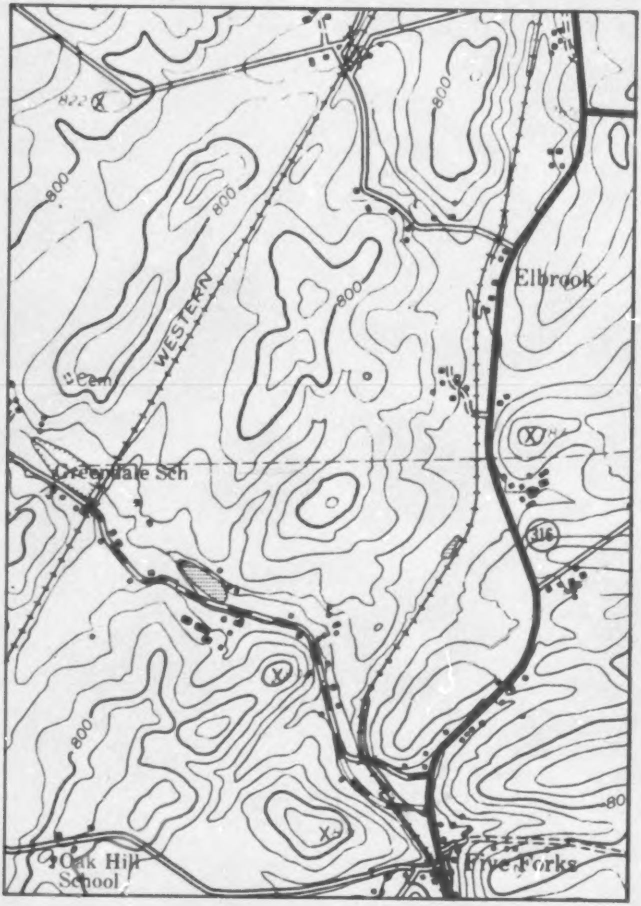
822
800
800
800
800
800
800
80
WESTERN
Cem
Elbrook
Greendale Sch
316
Oak Hill
School
Five Forks

Figure 1.

Step 5: Field Work Preparation

You now must go to the map area to check out detail in the terrain. This is necessary for several reasons:

a. The "topo" map may be several years old. Many changes could have occurred, e.g., new roads built, new houses added, old houses now gone, ponds dried up, new power lines, etc.

b. Areas that were fields may now be overgrown, and wooded areas may have been logged.

c. Items that are in the terrain may never have been included on the map, e.g., caves, cliffs, boulders, gravel pits, etc. These are all details that add greatly to the accuracy of the map and enable the orienteer to check his position as he travels through the area. They also serve as good control points when setting up the course.

For field work, mount your mylar map copy onto a firm board that is easily carried (a clipboard is perfect). Securely fasten a new piece of mylar on top of the map copy. If this is done properly, you will be able to read all of the map detail showing through. It is a good idea to tape down the edges so that moisture cannot get onto the copy below, which is drawn in ink and thus may smear.

The only other items needed are a compass, eraser and two pencils – one black and one red. The black pencil is used to add features while the red pencil is used to note deletions and changes, e.g., to cross out a house that no longer exists or a path that is overgrown.

Step 6: Map Correction Criteria

Do not get bogged down trying to accurately plot a boulder deep in the woods or to alter a contour line that you think is not quite correct. Since you have only one or two days to spend, use them in the most beneficial manner.

Emphasis should be on quality, not quantity. It is better to add a few details correctly than to put in a lot of incorrect features. The orienteers are relying on the map detail to be accurate. If they find a lot of misleading detail, they will soon lose confidence in the map. It is easier to explain that you missed something than you did it wrong.

You should be primarily interested in the major features in the area. The first thing is to check out all the roads, paths, power lines, houses, ponds, fields, etc. These are the arteries that the group will travel on, and the features where the control points will most likely be located. Basically you are trying to check the obvious visible features. Items such as cliffs, marshes or boulders should be added or checked only if it is easy to do so and if they are large and obvious.

Step 7: Map Correction Method

Try to develop the habit of pace-counting while walking. It is easy to learn, fairly accurate, and will save you much time. Take steps as close to one meter as possible. By counting your steps you can determine how far you have travelled.

Start your corrections from a point on the map that you can identify positively; a building or road junction is a good place to begin. Once you have identified a start point and are satisfied that it is correct, you can then use it as a reference point.

This reference point becomes the block that you start building from. Look at the map and see what other feature is close by – another house? A path junction? Measure the distance between the two points using the edge of your compass. Calculate how many meters that distance is. Convert that distance into number of paces. Walk to the second feature counting your steps as you walk. If it checks out, you will have accomplished two things: (1) you will know that your pace-counting is reliable and (2) you will now have a second reference point. From this second point you will look at the map and locate another feature. Repeat the process. Each time you check out a feature it gives you another reference point that you can use to build from.

What happens when you do not find a feature that is on the map? First, go back to the last reference point that you are certain of. Now try again. If it still does not check out, go to another reference point nearby. Try again from this location. If it still does not check out, take your red pencil and delete the feature from the map. Actually you do not delete it; you make the red deletion on the top copy, *not* on the underneath copy.

How do you add features that are not on the map? If you are on a path between two reference points it is easy to pace-count the distance from "reference point 1" to the feature. Make a mark on the map where you have paced to. From this mark measure the distance to "reference point 2." Now pace-count to "reference point 2." Does it check out? If so, then add the feature to the map at the spot where you made the mark. This happens quite often: you will come upon a trail going off the trail you are on and it does not show on the map. By pace-counting from the nearest reference points you can plot exactly where the new trail intersects the one you are on.

What do you do when you find a feature that is not on a path This requires more effort, but basically the same principle of pace-counting is used. However, you must also combine pace-counting with compass bearing. Let us look at a typical example. You are walking along a path and see a new shed built in the middle of a field. The following steps illustrate how the shed can be accurately plotted on your map:

a. Go to one corner of the field, preferably a corner that is clearly defined.

b. Aim your compass towards the shed. Keeping the compass steady in hand, turn the compass housing until the letter N on the rim of the housing is resting on top of the red magnetic needle.

c. Place the compass on the map, with the N-S lines of the compass housing parallel with the meridians of the map and with the side of the compass base plate through the point where you are standing, i.e., the corner of the field.

d. Take your black pencil and draw a line along the side of the base plate from the corner of the field (you can draw the line right across the field). What you have done is to draw a line along which the shed is located.

e. Go to another corner of the field and repeat the process. You will now have two lines crossing each other somewhere in the field. The shed is located at the spot where the two lines cross. You can verify this by pace-counting from the field corner to the shed and seeing that it agrees with a compass measurement that you can now do.

This last section is the most important in map correction. Make sure you understand it. It is easy to learn and is the technique used by all map makers. Continue adding and deleting features until you have covered the whole area.

Step 8: Map Re-drawing

You now take the top mylar sheet (the one on which you have been making all of the corrections) and place it under the mylar map. Be sure they line up perfectly and then fasten them securely onto a board. You will be able to clearly see all of the corrections showing through from the copy underneath.

Now take your drawing pens and add all of the features you found in the terrain and which are marked on the "under copy." Likewise delete all of the features you could not find.

It is helpful to the novice to be able to clearly identify streams. You can easily add small arrows to indicate which way a stream is flowing.

Step 9: Map Scale, Legend, Contour Interval

Note on the map what the map scale is. It is helpful if you can show a small measure which indicates that 1 cm. represents 100 meters or 1 mm. represents 10 meters.(This is assuming you are printing the map in a scale of 1:10,000.) Mark clearly what the contour interval is.

The legend shows everything included in the map detail, e.g., ponds, roads, buildings, fences, ruins, boulders, cliffs, etc. You must have a symbol in the legend for every type of feature that the orienteer will find in the terrain.

Your first map is now finished. Send your drawing to a printer, and you will soon be in possession of a black-white orienteering map which will greatly enhance the orienteering program you introduce at your school.

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Film Distributors

(1) International Film Bureau, 332 S. Michigan Ave., Chicago, IL. 60604.
(2) Orienteering/Ser., 308 Fillmore Ave., Colorado Springs, CO.
(3) Orienteering/Ser., 446 McNicoll Ave., Willowdale, Ontario, Canada.
(4) Piccadilly Films International Co., Ltd., Box 16255, Lapham Station, San Antonio, TX 78246.

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